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United States  
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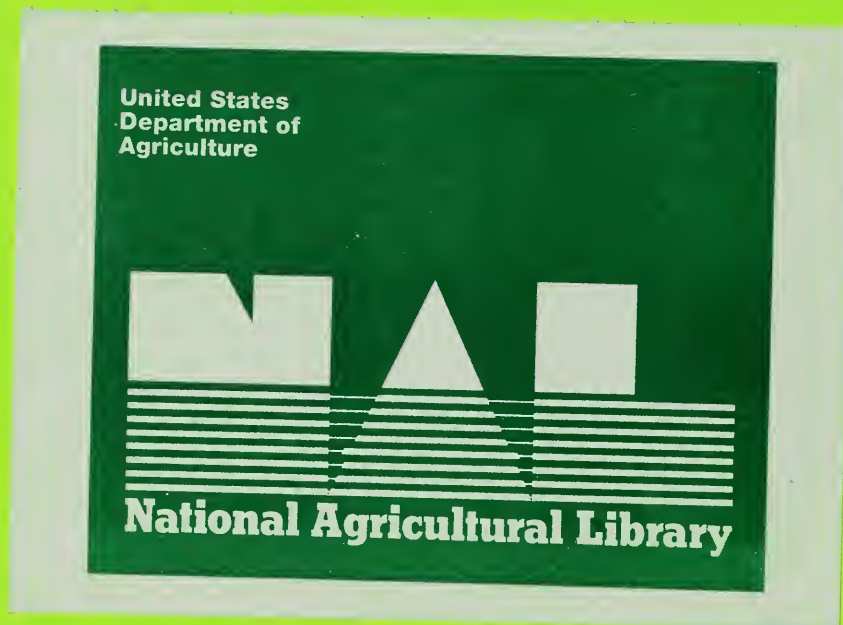
# Lab Bay Project Area Final Environmental Impact Statement

## Ketchikan Pulp Company Long-Term Timber Sale Contract

### Volume 2

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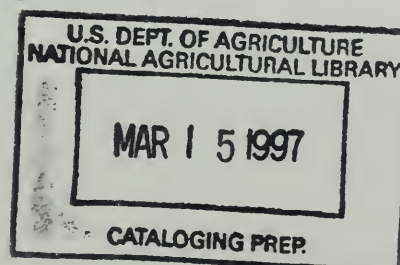
Contract No. 53-0109-2-00344

Lab Bay Environmental Impact Statement

# Appendix A

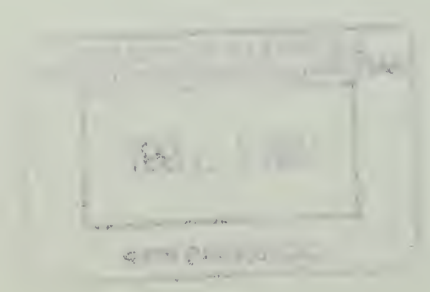
## Reasons for Scheduling the Environmental Analysis of the Lab Bay Area

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# Reasons For Scheduling The Environmental Analysis Of The Lab Bay Project Area

## KPC Long-term and Independent Timber Sale Contract Offerings

This appendix explains why the Lab Bay Project Area is scheduled for environmental analysis at this time.

### Summary

Reasons for scheduling the Lab Bay Project Area at this time, for detailed consideration of timber harvest under the long-term timber sale contract between Ketchikan Pulp Company (KPC) and the Forest Service (Contract No. A10fs-1042) and/or under independent timber sales, may be summarized as follows:

1. The Lab Bay Project Area contains a sufficient amount of harvestable timber volume designated as LUD III or IV, and therefore appropriate for harvest under the Tongass Land Management Plan (TLMP). Available information indicates harvest of the amount of timber being considered for this project can occur consistent with TLMP standards and guidelines and other requirements for resource protection. Analysis also indicates harvest of the amount of timber being considered can occur consistent with the proposed TLMP Revision standards and guidelines and other resource protection requirements.
2. Areas with available timber both inside and outside the designated long-term contract sale area will be necessary for harvest in order to meet timber supply requirements under the contract. The Lab Bay Project Area is within the designated sale area for the long-term contract. The contract requires the Forest Service to look first to the designated sale area for timber to meet the contract's supply requirements before offering timber outside that area.
3. Areas with available timber both within and outside the designated sale area will also be necessary to consider for harvest in order to seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle, pursuant to Section 101 of the Tongass Timber Reform Act (TTRA).
4. Effects on subsistence resources are projected to differ little according to which sequence these areas are subjected to harvest. Harvesting other areas on the Tongass National Forest with available timber is expected to have similar potential effects on resources, including those used for subsistence because of widespread distribution of subsistence use and other factors. Harvest of these other areas is foreseeable, in any case, over the forest planning horizon under either the existing or proposed revised TLMP.
5. Providing substantially less timber volume than required by the long-term contract with KPC and/or required to meet TLMP and TTRA Section 101 timber supply and employment objectives in order to avoid harvest in the Lab Bay Project Area or other project areas would not meet contract requirements and is otherwise not necessary or reasonable.
6. It is reasonable to schedule harvest in the Lab Bay Project Area at the present time rather than other areas in terms of previous harvest entry and access, level of controversy over subsistence and other effects, and the ability to complete the National Environmental Policy Act (NEPA) process and make timber available to meet long-term contract requirements by the time it is

reasonably necessary to do so. Other areas that are reasonable to consider for harvest in the near future are the subject of other project EISs that are currently ongoing or scheduled to begin soon.

More detail regarding the scheduling of the environmental analysis for the Lab Bay Project Area is presented in this appendix in four subsections:

Ketchikan Pulp Company Contract Requirements  
Southeast Alaska Timber Demand  
Tongass Land Management Plan  
Forest Plan Implementation

## Ketchikan Pulp Company Contract Requirements

### Contract Background

The current management situation consists of a valid contract between the Forest Service and Ketchikan Pulp Company (KPC), Contract Number A10fs-1042. Congress modified the contract in the Tongass Timber Reform Act (TTRA) of 1990. This contract bestows rights and obligations on both parties. One obligation for the Forest Service is to provide a supply of timber for harvest by KPC. The Forest Service must seek to provide the supply from a designated sale area within the Tongass National Forest before offering timber outside that area.

The "sale area" delineated on maps referenced in Section B0.3 of the contract occupies approximately the northern half of Prince of Wales Island, and the Gedney Pass, Traitors Cove, and Neets Bay areas on Revillagigedo Island. This is often referenced as the contract "primary sale area." Section B0.31 of the contract references an area approximately equivalent to the remainder of the Ketchikan Area of the Tongass National Forest as an area within which the Forest Service is authorized to make available additional timber for harvest under the contract, if the quantity of timber available for harvest within the primary sale area is not sufficient to meet contract supply obligations. This additional area is often referenced as the contract "contingency area."

The designated sale area, and as necessary the contingency area, remain the dominant sources for meeting KPC contract timber volume obligations. Congress in enacting the Tongass Timber Reform Act declined to modify the contract sale area, and by directing in section 301(e) of the statute that the Secretary of Agriculture report to Congress on the effects of eliminating the sale area, indicated an intent to reserve this decision to the legislature.

The Alaska Native Claims Settlement Act (ANCSA) and Alaska National Interest Lands Conservation Act (ANILCA) provide authority to offer timber from outside the Contract sale area or contingency area to substitute for areas selected by Native Corporations under ANSCA or designated by Congress as Wilderness in ANILCA that are within the sale area or contingency area. This authority can be used as needed to meet Contract volume requirements. Although statements have appeared in past EIS documents indicating this substitution had been completed, those statements were in error.

With regard to providing timber volume under the Contract, section B0.61 and section B0.62, read as follows:

**B0.61 Timber Offering Schedule.** Each year prior to February 15, Forest Service after consultation with purchaser shall develop a tentative Offering schedule based upon the Tongass National Forest Land and Resource Management Plan, which shall display Offering Areas and timber volumes proposed for harvest, and the expected NEPA process commencement and completion



date for making any additional Offerings under the terms of this contract. To the extent authorized by law, Offering Areas may be identified for harvest outside the Sale Area, as needed to meet sale volume requirements. The tentative schedule shall list sufficient timber volume and schedule commencement of the NEPA process by Offering Area or Areas to provide Purchaser a Current Timber Supply sufficient for at least three years of operations hereunder or until the contract termination date, whichever occurs first, adjusting for the provisions of B0.63 and B6.36. In developing the schedule, Forest Service will consider the production requirements of Purchaser's manufacturing facilities.

**B0.62 Specifying Offerings for Harvest.** Based upon the tentative schedule and NEPA process, and consistent with timber sale planning, management requirements, and environmental assessment procedures for independent Tongass National Forest timber sales, Forest Service after consultation with Purchaser and completion of the NEPA process, shall specify any additional Offerings. Forest Service shall seek to specify sufficient Offerings to maintain a Current Timber Supply in all Offering Areas that totals at least three years of operations hereunder or until the contract termination date, whichever occurs first, and which meets the production requirements of Purchaser's manufacturing facilities.

As indicated above, section B0.62 states in part "Forest Service shall seek to specify sufficient Offerings to maintain a Current Timber Supply in all Offering Areas that total at least three years of operations hereunder or until the contract termination date, whichever comes first, and which meets the production requirements of Purchaser's manufacturing facilities." "Current Timber Supply" is defined in the contract generally as timber which the Forest Service has specified according to Forest Service planning procedures and for which the NEPA process has been completed. The Forest Service specifies timber by approving in writing a timber "Offering" under the contract, comparable to an independent timber sale. This approval in writing is represented by issuance of an "A Division" contract document for the Offering.

An EIS such as the Lab Bay Project Area EIS may cover one or more of these Offerings, which may be specified by the Forest Service and therefore added to the contract "Current Timber Supply" concurrently or sequentially after issuance of the Record of Decision (ROD) for the Project. Generally, layout on the ground of roads and harvest units selected in the ROD will be completed for each Offering prior to issuance of the "A Division" approval document.

Any long-term contract offerings implemented through this Project will help meet long-term contract timber supply needs. Section B0.63 of the contract allows KPC to reject timber offerings specified by the Forest Service. In that event, the contract provides for resale of the offering as part of the independent timber sale program. Thus, any long-term contract timber offering cleared through the NEPA process is subject to reoffer as an independent timber sale.

As for obligations of KPC, contract provisions require KPC, among other duties, to pay for and harvest timber, construct and operate a pulp manufacturing plant, and to recruit labor from residents of Southeast Alaska. KPC operates a pulp mill and a sawmill in Ketchikan and a sawmill in Metlakatla.

### **Current Timber Supply and Volume Needs**

The maximum average annual rate per year at which KPC is generally allowed to harvest is 192.5 MMBF under long-term contract section B0.52. KPC's average harvest rate, obtained from contract records, during the five-year period from March 1, 1989 through February 28, 1994 was 185.4 MMBF per year. Using these figures for planning and projection purposes, a three year supply of timber for KPC's operations under the contract is estimated to range from 556.2 to 577.5 MMBF.

Current projections indicate that areas with available timber outside as well as within the designated sale area and contingency area will be necessary for harvest in order to meet contract supply requirements. As of July 1, 1996, KPC had a current timber supply of approximately 299 MMBF. The maximum volume of timber that can be provided to KPC from within the designated sale area in the remainder of fiscal year 1996 is about 3.5 MMBF. The maximum amount that can be provided to KPC from within the total contract area during 1997 is expected to be about 156 and during 1998 about 103.7 MMBF. Assuming the maximum annual average harvest rate of 192.5 MMBF, a timber supply of 110 MMBF would be available at the end of 1996, 75.5 MMBF at the end of 1997, and 0 MMBF at the end of 1998. These levels would fall well short of meeting the objective of specifying a three-year supply for operations under the contract, considering on-going harvest at either the maximum or historic rates noted above. KPC in 1996 or 1997 may harvest far less than the maximum or historical annual average harvest. But for purposes of planning and completing the NEPA process for timber sale projects, the Forest Service strives to be prepared for KPC to harvest at maximum levels authorized under the contract, to assure ability to meet contract supply needs.

There have been suggestions that layout and other actions could be expedited to increase the amounts available from the KPC sale area and contingency area through 1997. However the current assessment is that further expediting layout is not feasible, even with significant increased funding, while maintaining a reasonable assurance of quality work. The Forest Service has made efforts to accelerate the preparation of new offerings within the KPC sale area and contingency area. At present, about 591.7 MMBF in new timber projects are being planned within the KPC sale area and contingency area over the duration of the contract, beyond what is projected in the 1996 - 1998 figures presented above. However, because of the amount of time required to prepare new offerings in accordance with applicable laws, none of this volume is projected to be available until after fiscal year 1998. It remains to be seen how much of the volume in preparation will be cleared through the NEPA process and when it will be available.

Consequently, additional timber from outside the sale area and contingency area is projected to be needed in order to meet the three-year timber supply objective. Sale offerings currently scheduled, undergoing NEPA evaluation, or at some other stage in the preparation process are projected to be needed to help meet the long-term contract and independent sale program's three-year supply objectives. If any currently planned independent sales were converted to long-term contract offerings, equivalent volume currently planned for long term contract offerings would then need to be substituted as independent sale offerings in order to meet program objectives. The first offerings from the Lab Bay Project Area could be made available in 1997 to help meet either three-year supply objective.

The projected need to offer volume from outside both the primary sale area and contingency sale area is based on the fact that all remaining areas with available timber within the primary sale area and contingency area are expected to have timber offerings under the long-term contract by the year 2004. In making this projection, no more than local use levels of timber harvest under contract section B0.32 are projected in the primary sale area through 2004. Nevertheless, insufficient quantities of economically operable timber appear to remain available within the primary sale area and contingency area to satisfy long-term contract requirements through the year 2004. Volume estimates from the TLMP RSDEIS preferred alternative indicate that the total ASQ from the total long-term contract sale area would be 132 MMBF per year, with 119 MMBF per year of that volume considered economically viable.

The Lab Bay Project Area is within the designated sale area for the long-term contract. More information on why the Lab Bay Project Area was scheduled for environmental analysis at this time in addition to other areas is presented in the TLMP and Forest Plan Implementation sections below.

### **Why Providing Less Than The Needed Contract Supply Was Not Considered In Detail**

Congress in section 301(e) of the TTRA also indicated its intent to reserve to itself the question of providing less than the contract supply obligation to KPC. The Forest Service can expect a large monetary



claim from KPC for not meeting contract supply obligations, for which there is no current funding. To the contrary, recent federal appropriations legislation has dedicated additional money to providing additional timber offerings to KPC and other Tongass National Forest timber purchasers. Volume from independent timber sales or sources outside the Tongass National Forest do not fulfill long-term contract requirements. In any case, there is not sufficient projected volume from other sources to meet KPC supply requirements.

Logs from Native corporation lands cannot substantially meet the total needs of KPC. Owners of private timberland are able to sell their sawlogs on the export market for much higher prices than are being paid by local manufacturing. KPC is not prohibited under the contract from purchasing timber from Native corporations or other sources, subject to the requirement that, "at least three-fourths of the pulpwood requirements of the pulp manufacturing plant and other processing facilities operated in conjunction with this sale shall be cut from the areas covered by this agreement during the period prior to July 1, 1964, and during each 5-year operating period subsequent to that date." (contract section B0.53). There are no provisions in the Contract to offset such purchases by adjusting the contract timber supply. Harvest from Native corporation lands is decreasing, reducing potential pulp as well as sawlog availability from these lands (TLMP RSDEIS page 3-268).

Canadian timber has been mentioned in the past as a source of supply for Southeast mills. Southeast Alaska pulp mills have purchased pulp logs from British Columbia (BC) in the past. However, the political and economic situation in British Columbia has changed to decrease the likelihood of a substantial supply from this source. The June 1988 issue of British Columbia Lumberman, page W14, states that a substantial increase in demand for BC forest products is expected to decrease log exports. The Forest Minister stated: "Our main objective is to use BC timber to manufacture wood products in this province." It has been more recently stated that British Columbia is considering prohibiting log exports and is facing increased environmental pressures. KPC was able to purchase slightly under 10 MMBF of pulp logs from Canada in 1996 (Industry sources). However this purchase was considered a rare occurrence since it was due to a Canadian pulp mill being temporarily shut down for repairs and KPC was willing to pay relatively high prices for the pulp logs.

## **Southeast Alaska Timber Demand**

### **Introduction.**

Another reason for scheduling the environmental analysis of the Lab Bay Project Area is the overall demand for Tongass National Forest timber. This reason is separate but complementary to the long-term contract reasons. It is important to note that the Forest Service obligations under the long-term contract are clearly separate from the Forest Service obligations under Section 101 of TTRA. The discussion in this section does not define any of the Forest Service's obligations under the long-term contract discussed in the previous section. For example, the Alaska Forest Association (AFA) prediction that only 35% of all logs will be pulped does not affect long-term contract obligations.

In general, this section indicates that areas with available timber both inside and outside the KPC sale area will also be necessary to consider for harvest in order to seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle, pursuant to Section 101 of the Tongass Timber Reform Act.

### **Ketchikan Pulp Company.**

The dissolving pulp mill operated by KPC reportedly requires 190 MMBF of pulpwood and/or chips annually to operate at its full annual capacity of 210,000 tons. This capacity exceeds the 525 tons per

day capacity specified in the long-term contract in section B0.11. KPC also operates two sawmills with a reported combined log processing capacity of 110 MMBF annually. Chip by-products from the sawmills are used in pulp manufacture. The KPC pulp and sawmills are supplied by timber from Tongass independent timber sales as well as long-term contract

### **Independent Mills.**

At the present time, Viking Lumber (purchasers of the "Klawock mill") and Seaborne Lumber Company are the primary processors of timber from the independent sale program. At present, Seaborne Lumber Company is not currently operating. The mill is temporarily shut down, citing a lack of certainty about Tongass timber supply as one of the reasons. During this shutdown, a relocation to Prince of Wales Island is under consideration. This relocation may include restructuring of the mill to produce more value added finished products rather than rough lumber. The two sawmills are the largest independent mills operating in the region and have a reported combined processing capacity of 65 MMBF per year.

A third large sawmill is located in Wrangell and owned by Alaska Pulp Corporation (APC). Despite the record lumber prices at the time, the mill was closed indefinitely on November 30, 1994. Although APC has offered to sell the mill, at least one prospective purchaser has declined to purchase it, citing a lack of certainty about Tongass timber supply as one of the reasons.

Another market segment for independent timber sales includes four relatively small sawmills, with an estimated combined processing capacity of 30 MMBF per year. Finally, there are at least 10-12 other buyers who use very small amounts of wood in the manufacture of musical instruments, cedar shakes, shingles, and lumber using small, portable mills. The combined annual processing capacity of these smaller operations is estimated at 7 MMBF.

### ***Description of Timber Consumption Scenarios***

To develop an estimate of the volume of Tongass timber likely to be consumed by the timber industry in Southeast Alaska, this section analyzes: 1) the percent of installed wood processing capacity that is typically utilized, 2) the proportion of the wood supply that is typically sawn, and 3) the availability of supply from other sources, including Native corporations, the State of Alaska, and imports. The approach used to estimate each of these variables is discussed below.

#### **Capacity Utilization.**

For many years, the Forest Service has monitored installed capacity as reported by the firms operating sawmills and pulp mills in Southeast Alaska. These reports cover a twenty-four year span (1970-1994) in which the reported total annual mill capacity ranged from a high of 785 MMBF in 1980 to a low of 519 MMBF following the 1993 closure of the Sitka pulp mill. Processing capacity in sawmilling has been especially volatile over the years, following trends in market cycles. Sawmill capacity was reported at 199 MMBF in 1970, increased to a high of 435 MMBF in 1979, dropped back down to 240 MMBF in the mid-eighties, and increased again to 329 MMBF in 1994.

Because the bulk of Alaska's wood products have traditionally moved into export markets, trade statistics compiled by the U.S. Department of Commerce can be used to approximate the aggregate output of sawmills and pulp mills in Southeast Alaska for a corresponding number of years. Estimates such as these have already been generated by the Pacific Northwest Research Station for the period 1970-1991 (cite Brooks and Haynes, June 1994) and recent Forest Service reports provided similar data for more recent years (cite 706(a) reports).



This data was used to calculate the average rate of capacity utilization for sawmills and pulp mills in Southeast Alaska over the last decade (1985-1994). This time period was chosen because it encompasses both extremes in the market cycle for lumber and pulp. It is also representative of industry operations following the period of restructuring that occurred in the early eighties, and is therefore more likely to reflect the operational considerations faced by the industry today. The available data indicate that over the last decade, sawmills in Southeast Alaska actually utilized an average of 54 percent of their reported log processing capacity. In contrast, an average of 86 percent of the reported pulp mill capacity was utilized over the same period of time.

### **Proportion of Wood Sawn.**

It is important to recognize that sawmill consumption and capacity both refer only to the sawable portion of the timber supply. This in turn depends on end product selling values and the physical characteristics of the timber. The lower quality logs included in most timber sales are generally not sawn. The Alaska Forest Association (AFA) reports that the "best utilization of the Tongass fiber" is for 65 percent of the spruce and hemlock harvested to be sawn, with the remainder used in pulp manufacture (Source: FAX dated 10/26/95 -- Minimum Tongass National Forest Timber to Support Ketchikan Pulp Company). Thus, it is assumed in all the calculations for this report that the sawmills in the region process about 65 percent of all spruce and hemlock purchased. However, it is recognized that this percentage does fluctuate depending on market price swings for both lumber and pulp and other factors, and varies by mill (706(a) Supply and Demand Report, 1994; pages 2-4; 11-12; 15-17; 23-26; and 29-31).

### **Additional Sources of Supply.**

This section repeats some of the same items presented under the KPC long-term contract discussion. They are being repeated here since other mill owners in Southeast Alaska face the same situation. Mill owners in Southeast Alaska have stated that their operations are dependent on the supply of timber provided from the Tongass National Forest. As is noted below, other sources of timber supplies are expected to be available only intermittently and in small quantities. For purposes of this analysis we assume that other supply sources will continue to make a relatively small contribution to total timber availability in the region each year, on the order of 20 MMBF of generally pulp quality material.

Although Canadian logs were obtained at a very low cost in the early 1980's, they typically do not serve as an economical supply for Alaska's mills. Canada's log exports in general have declined as cutbacks in timber supply were initiated as the Canadian government responded to environmental concerns. A subsequent rise in selling values for Canadian pulp logs has kept Alaska's import volumes at a near-zero level for the past several years. KPC was able to purchase slightly under 10 MMBF of Canadian pulp logs during 1996, however this was due primarily to the temporary shut down of a British Columbia pulp mill and KPC's willingness to pay high prices for the logs.

Since 1983, timber harvest on lands owned by Alaska Native corporations has exceeded harvest levels on the Tongass. However, in contrast to National Forest timber supplies, timber from Native lands is not subject to in-State processing requirements. Because export market prices greatly exceed those paid by local manufacturers, all but the lowest quality Native timber is sold overseas. Therefore, although some Native pulp logs are sold locally, this timber is not well-suited for lumber production and generally does not meet the needs of the local sawmills.

Some 58,000 acres of State land are available for timber management in the Haines vicinity and another 3,000 acres near Yakutat. After several years of inactivity, the timber sale program was recently resumed on the Haines State Forest. The State's timber program in Southeast is relatively small, however, with an average annual harvest of 9 MMBF over the last five years.

**Table 1. Timber Consumption Scenario #1 -- Reported Mill Capacity**

	<i>Capacity Log Consumption</i>	<i>By-Product Chips</i>	<i>Pulp Logs</i>
<b>Ketchikan Pulp Company</b>			
Pulp Mill	190		
Ketchikan Sawmill	50	20	27
Annette Island Sawmill	60	24	32
<b>Larger Sawmills</b>			
Viking Lumber Chip Mills	30	12	16
Seaborne Lumber Company	35	14	19
APC Wrangell Mill	110	44	59
<b>Smaller Sawmills</b>			
Metlakatla Indian Tribe (MITE)	10	4	5
Pacific Rim Cedar	10	4	5
The Mill, Inc.	5	2	3
Jim Ensley	5	2	3
<b>Misc Other Small Purchasers</b> (This includes music wood, cedar salvage, and small portable sawmilling operations)	7	3	4

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### **Summary 1a. Reported Capacity Consumption Scenario w/Wrangell Mill**

Total Wood Consumption	512 MMBF
Sawn	322 MMBF
Pulped	190 MMBF
 Total chip by-products generated	 129 MMBF
Total pulp log harvest	173 MMBF
Pulp logs from Native Corps./imports	20 MMBF
	-----
	322 MMBF

Subtotal spruce/hemlock = sawlog + pulp log = 322 MMBF + 173 MMBF = 495 MMBF

Cedar component (12% of harvest) = 68 MMBF

**TOTAL TONGASS HARVEST** = 495 MMBF spruce/hemlock + 68 MMBF cedar = 563 MMBF

Note: Under these conditions it appears excess pulp fiber would be available in Southeast Alaska, i.e. 129 MMBF in chip by-products + 173 MMBF pulp log plus 2- MMBF from other sources harvest - 190 MMBF = 132 MMBF in excess of that needed to run pulp mill at capacity. Under these conditions, a higher percentage of the wood supply would likely be sawn, and, depending on market conditions, surplus chips might also be exported.

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### **Summary 1b. - Reported Capacity Consumption Scenario w/o Wrangell Mill**

Assuming the Wrangell mill remained closed and all other mills operated at capacity, the summary numbers would be as follows:

Total Wood Consumption	402 MMBF
Sawn	212 MMBF
Pulped	190 MMBF
 Total chip by-products generated	 85 MMBF
Total pulp log harvest	114 MMBF
Pulp logs from Native Corps./imports	20 MMBF
	-----
	219 MMBF

Subtotal spruce/hemlock = sawlog + pulplog = 212 MMBF + 114 MMBF = 326 MMBF

Cedar component (12% of harvest) = 44 MMBF

**TOTAL TONGASS HARVEST** = 326 MMBF spruce/hemlock + 44 MMBF cedar = 370 MMBF

Note: Most chip by-products and pulp logs harvested would be likely consumed by the KPC pulp mill under this scenario, leaving an estimated 29 MMBF of pulp material for export or other uses (85 + 114 + 20 - 190 = 29).



**Table 2. Timber Consumption Scenario #2 - Reported Decade Average Capacity Utilization (KPC pulp mill 86 percent of capacity; sawmills 54 percent of capacity)**

	Average Log Consumption	By-Product Chips	Pulp Logs
<b>Ketchikan Pulp Company</b>			
Pulp Mill	163		
Ketchikan Sawmill	27	11	15
Annette Island Sawmill	32	13	17
<b>Larger Sawmills</b>			
Viking Lumber/Chip Mill	16	6	9
Seaborne Lumber Company	19	8	10
APC Wrangell Mill	59	24	32
<b>Small Sawmills</b>			
Metlakatla Indian Tribe (MITE) 5		2	3
Pacific Rim Cedar	5	2	3
The Mill, Inc.	3	1	1
Jim Ensley	3	1	1
<b>Misc Other Small Purchasers</b>	4	2	2
(This includes music wood, cedar salvage, and small portable sawmilling operations)			

**Summary 2a. Reported Decade Average Capacity Utilization Scenario w/ Wrangell Mill**

Total Wood Consumption	337 MMBF
Sawn	174 MMBF
Pulped	163 MMBF
 Total chip by-products generated	 70 MMBF
Total pulp log harvest	94 MMBF
Pulp logs from Native Corps./imports	20 MMBF
	-----
	184 MMBF

Subtotal spruce/hemlock = sawlog + pulp log = 174 MMBF + 94 MMBF = 268 MMBF

Cedar component (12% of harvest) = 36 MMBF

**TOTAL TONGASS HARVEST = 268 MMBF spruce/hemlock + 36 MMBF cedar = 304 MMBF**

Note: Under these conditions the fiber supply from the Tongass (and the by-products generated from it) would be exactly equal to the volume of wood consumed by the pulp mill and sawmills.

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**Summary 2b. Reported Decade Average Capacity Utilization Scenario w/o Wrangell Mill**

Assuming the Wrangell mill remained closed and all other mills operated at the decadal average capacity utilization level, the summary numbers would be as follows:

Total Wood Consumption	278 MMBF
Sawn	115 MMBF
Pulped	163 MMBF
Total chip by-products generated	46 MMBF
Total pulp log harvest	62 MMBF
Pulp logs from Native Corps./imports	20 MMBF
	-----
	128 MMBF

Subtotal spruce/hemlock = sawlog + pulplog = 115 MMBF + 62 MMBF = 177 MMBF

Cedar component (12% of harvest) = 24 MMBF

TOTAL TONGASS HARVEST = 177 MMBF spruce/hemlock + 24 MMBF cedar

= 201 MMBF

35 MMBF

236 MMBF

\*see note below

Note: Under this scenario, there would not be enough pulp logs and chips generated from operation of the sawmills to run the KPC pulp mill at 86 percent of capacity. Approximately 35 MMBF of additional timber sale volume would be required to meet the production assumptions in this scenario.

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## ***Tongass Timber Outlook***

As of July 1996, a total of 110 MMBF of timber was under contract to independent sale operators and 299 MMBF was released and unharvested under the long-term contract with KPC.

An additional 275.3 MMBF of timber is currently projected to be offered as independent sales before the end of fiscal year 1998 and 376.2 MMBF is projected to be offered under the long-term contract.

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***Table 3. Projected Timber Sales FY 1996 Through FY 1998***

### ***Remaining 1996 Independent Sales***

Rod'n Apple	Chatham Area	9.0 MMBF
Shamrock	Stikine Area	21.0 MMBF
<hr/>		
TOTAL FY 1996		30.0 MMBF

### ***FY 1997 Independent Sales***

Sentinal Island	Ketchikan Area	6.8 MMBF
Heceta Sawfly	Ketchikan Area	12 MMBF
District Small Sales	Ketchikan Area	6.8 MMBF
Poison Cove	Chatham Area	19.1 MMBF
Lisa Creek	Chatham Area	6.6 MMBF
Waterwold	Chatham Area	9.5 MMBF
Duffield	Chatham Area	20.5 MMBF
Indian River	Chatham Area	10 MMBF
King George	Stikine Area	20 MMBF
South Lindenburg	Stikine Area	22 MMBF
King George II	Stikine Area	2 MMBF
PRD Small Sales	Stikine Area	3 MMBF
<hr/>		
TOTAL FY 1997		138.3 MMBF

### ***FY 1998 Independent Sales***

Control Lake Misc.	Ketchikan Area	5 MMBF
District Small Sales	Ketchikan Area	4 MMBF
Nakwasina	Chatham Area	3 MMBF
Ushk Bay 1	Chatham Area	20 MMBF
Lindy	Stikine Area	30 MMBF
Fanshaw	Stikine Area	40 MMBF
King George III	Stikine Area	2 MMBF
PRD Small Sales	Stikine Area	3 MMBF
<hr/>		
TOTAL FY 1998		107 MMBF

**Remaining 1996 KPC Contract Volume**

Neka 1	Chatham Area	30.0 MMBF
<hr/>		
TOTAL FY 1996		30.0 MMBF

**FY 1997 KPC Contract Volume**

Naukati/Sarkar	Ketchikan Area	13.0 MMBF
Polk	Ketchikan Area	35.9 MMBF
Carroll	Ketchikan Area	20.0 MMBF
Control Lake 1	Ketchikan Area	30.0 MMBF
Control Lake 2	Ketchikan Area	30.0 MMBF
Lab Bay 1	Ketchikan Area	20.0 MMBF
Lab Bay 2	Ketchikan Area	20.0 MMBF
Neka 2	Chatham Area	15.0 MMBF
<hr/>		
TOTAL FY 1997		183.9 MMBF

**FY 1998 KPC Contract Volume**

12 Mile South	Ketchikan Area	9.1 MMBF
Teal	Ketchikan Area	23.7 MMBF
Bluff Lake	Ketchikan Area	20.0 MMBF
Control Lake 3	Ketchikan Area	30.0 MMBF
Control Lake 4	Ketchikan Area	30.0 MMBF
Port Houghton 1	Chatham Area	30.0 MMBF
Canal/Hoya	Stikine Area	20.0 MMBF
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TOTAL FY 1998		162.8 MMBF

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## ***Meeting Market Demand***

Timber demand in Southeast Alaska can vary dramatically from year to year. The level of demand is dependent on complex interactions among factors that are difficult, if not impossible, for the industry or the Forest Service to predict with accuracy. Such factors include fluctuations in interest rates, housing starts, business cycles in the United States and overseas, changes in the value of the dollar with respect to foreign currencies, changes in import tariffs, and changes in export policies in other countries.

To be responsive to market demand, the Forest Service attempts to provide an opportunity for the industry as a whole to accumulate a supply of purchased but unharvested timber (i.e. volume under contract) equal to about three years of timber consumption. There are a number of reasons for allowing the accumulation of volume under contract. First, this allows the industry ample time to plan an orderly and systematic harvest schedule that meets all timing restrictions and permit requirements. Second, it allows the industry to better manage its financial resources and to secure financing on the basis of longer term timber supply. Third, it allows time for the necessary infrastructure (roads, log transfer facilities, and logging camps) to be put in place prior to timber harvest. Finally, an ample timber supply gives the industry more opportunity to sustain itself through market cycles. If demand for pulp or lumber in any year suddenly increases, producers will have access to enough timber to respond to the increase in demand without waiting for the Forest Service or the Congress to take action. Normally, the unharvested volume under contract will be drawn down during high points in the market when mills increase production, and built up when markets are poor and production declines. In response to changes observed in the volume under contract the Forest Service may consider adjusting its budget and timber program.

For purposes of this analysis, the same alternative measures of timber consumption described previously are used to approximate the three-year timber supply goal. The forest-wide average cedar component of 12 percent is added to the consumption estimates to put the three-year supply goal in terms of total timber sale volume. Again, under Scenario 1 it is assumed that reported mill capacity is the best approximation of short-term timber consumption. Using this assumption, a three-year timber supply equates to 1,689 MMBF (including cedar) (Table 4). Under Scenario 2, it is assumed that the reported average capacity utilization over the last decade is the best approximation of short term timber consumption. Using these assumptions, a three-year timber supply equates to 912 MMBF (including cedar) (Table 5). The effect of a permanent closure of the Wrangell mill is also examined for each alternative.

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**Table 4. Three-Year Supply-Scenario 1**

	<b>Capacity Consumption</b>	<b>Cedar</b>	<b>3-Year Supply</b>
All mills including Wrangell	495 MMBF	68 MMBF	1689 MMBF
All mills excluding Wrangell	326 MMBF	44 MMBF	1110 MMBF

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**Table 5. Three-Year Supply-Scenario 2**

	<b>Decade Avg. Capacity Utilized</b>	<b>Cedar</b>	<b>3-Year Supply</b>
All mills including Wrangell	268 MMBF	36 MMBF	912 MMBF
All mills excluding Wrangell	212 MMBF	24 MMBF	708 MMBF

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## Summary

It is reasonable to anticipate that the independent mills currently in operation and KPC will seek to purchase a minimum of 15 MMBF in timber sale volume from the Forest Service at the earliest possible opportunity in order to meet decadal average consumption rates through FY 1998 (Table 6). For all mills to operate at reported capacity through FY 1998, an estimated 243 MMBF in timber sale volume would need to have been made available by the Forest Service in time for logging and road building activities to be completed early in the season. This figure should be viewed as an absolute minimum. It is highly unlikely that timber purchasers could obtain the necessary permits and meet all timing restrictions on road construction and harvest and still make use of the entire timber volume provided in a single season. Additional offerings would allow for these constraints as well as provide the opportunity for the mills to increase capacity utilization, accumulate volume under contract, and/or for the Wrangell sawmill and others to be reopened. Under the timber consumption scenarios described above, a minimum of 636 MMBF in additional (roaded and accessible) timber sale volume would be needed to satisfy the objective of providing a three-year supply of volume under contract. Thus, timber offerings of 855 MMBF by the end of FY 1998 would provide a supply of timber for KPC and the independent mills currently in operation while allowing for the accumulation of three years of volume under contract (based on the 10-year average rate of timber consumption) as a buffer to market volatility. The projected sale offerings for FY 1996-FY 1998 falls short of this mark by 203 MMBF.

Should the Wrangell mill reopen it is reasonable to anticipate that the independent mills currently in operation and KPC will seek to purchase a minimum of 127 MMBF of timber from the Forest Service at the earliest possible opportunity in order to meet projected consumption rates through FY 1998 (Table 7). For all mills to operate at reported capacity through FY 1998, an estimated 581 MMBF in timber sale volume would need to be made available by the Forest Service in time for logging and road building activities to be completed early in the season. Again, for reasons discussed above, this should be viewed as a conservative estimate. Under the timber consumption scenarios described above, a minimum of 804 MMBF in additional timber sale volume would be needed to satisfy the objective of providing a three-year supply of volume under contract to independent operators and KPC. Thus, timber offerings of 931 MMBF by the end of FY 1998 would provide a supply of timber for KPC and the independent mills currently in operation while allowing for the accumulation of three years of volume under contract (based on the 10-year average rate of timber consumption) as a buffer to market volatility. The sale schedule for FY 1996-98 falls short of this mark by 279 MMBF.

These projections do not include any additional volume that may become available in fiscal year 1997 or 1998 as a result of supplemental NEPA analysis required to lift the current AWARTA vs. Morrison court injunction, which affects about 175 MMBF of timber cleared in prior EIS's. It is not reasonable to project availability of any of this enjoined timber volume at least until after completion of the additional NEPA analysis. The projected sale offerings do include the Poison Cove sale that is the subject of a current court challenge and other sales offerings which may be subject to administrative appeals and litigation.

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**Table 6. Summary Excluding Wrangell Mill**

	1/Volume Under Contract	24-mo. - Consump- tion	Likely Purchase (a)	3-year Supply (b)	(a + b)	Projected Offerings 96-97	Shortfall
Scenario 1:	220	652	432	978	1410	568.9	841.1
Scenario 2:	220	424	204	636	840	568.9	271.1

Note: Volumes are in MMBF (sawlog + utility). Volume under contract and scheduled sales do not include volume enjoined.

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**Table 7. Summary Including Wrangell Mill**

	1/Volume Under Contract	24-mo. Consump- tion	Likely Purchase (a)	3-yr. Supply (b)	(a + b)	Projected Offerings 96-97	Shortfall
Scenario 1:	220	990	770	1485	2255	568.9	1686.1
Scenario 2:	220	536	316	804	1120	568.9	551.1

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# **Tongass Land Management Plan**

## **TLMP As Amended Winter 1985-86**

Chapter 1 of this EIS includes an explanation of how this project relates to the Tongass Land Management Plan. That section describes the Land Use Designations (LUDs) which allocate land areas to different types of management. Chapter 1 also explains that these LUDs were assigned to land areas known as Value Comparison Units (VCUs), and that one or more contiguous VCUs were formed into Management Areas (MAs). This section also describes the management emphasis for the Management Areas likely to be affected by the Lab Bay Project.

The Tongass Land Management Plan, As Amended Winter 1985-1986, not only detailed Management Direction/Emphasis for each Management Area, it also scheduled specific acres for timber harvest over time. Table 8 displays acreage in each Management Area scheduled for harvest and how many of those acres have already been harvested.

Table 8

TLMP, As Amended Winter 1985-86, Suitable Scheduled Acres

Management Area	Acres Scheduled	Existing Harvest	Percent Harvested
CO3	4506	0	0
C07	2235	0	0
C10	18228	79	0
C13	25727	140	1
C14	19495	20	0
C15	4502	1821	40
C18	5664	460	8
C19	3502	820	23
C21	27139	0	0
C24	2190	0	0
C25	7365	0	0
C27	9807	681	7
C28	21399	1742	8
C29	14081	2940	21
C30	34200	9479	28
C31	22358	4220	19
C32	9800	1920	20
C34	19376	1937	10
C35	8745	1898	22
C36	10723	240	2
C37	48754	18937	39
C39	16301	439	36
C40	32374	9341	29
C41	22321	7864	35
C43	22453	3183	14
C44	25694	6187	24
C45	9096	80	1
C48	13650	0	0
C53	17708	1722	10
C55	3550	541	15
C58	33073	0	0
<b>CHATHAM TOTAL</b>	<b>516016</b>	<b>76691</b>	<b>15</b>



Table 8 (continued)

## TLMP, As Amended Winter 1985-86, Suitable Scheduled Acres

Management Area	Acres Scheduled	Existing Harvest	Percent Harvested
S01	11954	60	1
S04	58630	20593	35
S07	13690	60	0
S08	11051	0	0
S09	29929	3356	11
S10	28642	3481	12
S11	32532	7308	22
S13	32767	3478	11
S16	21908	3903	18
S17	25782	8567	33
S18	5220	4266	82
S19	38901	13225	34
S20	15441	4014	26
S21	6436	2699	42
S22	3293	1081	33
S23	41368	5306	13
S25	30389	6601	22
S26	11766	180	2
S29	9020	5392	60
S31	4201	200	5
S33	8902	1780	20
S35	15022	5698	38
<b>STIKINE TOTAL</b>	<b>456844</b>	<b>101248</b>	<b>22</b>

Table 8 (continued)

TLMP, As Amended Winter 1985-86, Suitable Scheduled Acres

Management Area	Acres Scheduled	Existing Harvest	Percent Harvested
K01	30689	15444	50
K02	8112	317	4
K03	50689	22072	44
K04	20098	4559	23
K05	30331	15710	52
K07	67082	36078	54
K08	63864	15096	24
K09	45100	25009	55
K10	16714	6177	37
K11	30261	15083	50
K13	18655	20	0
K14	26872	16303	62
K15	20932	4759	23
K17	26377	16303	62
K18	29827	5805	19
K19	8816	60	1
K20	14201	702	5
K21	37920	1796	5
K22	27030	420	2
K24	30426	1704	6
K25	16048	0	0
K28	10864	0	0
K29	30968	0	0
K30	30885	841	3
K32	45414	16723	37
K34	171	20	12
K35	27446	10436	38
K39	14491	1199	8
K41	1664	603	36
K44	1306	0	0
<b>KETCHIKAN TOTAL</b>	<b>783253</b>	<b>219817</b>	<b>28</b>

The Allowable Sale Quantity (ASQ), calculated in TLMP and used in Congressional deliberations and decisions on ANILCA, assumed harvest in all LUD III and LUD IV VCUs, in compliance with the Southeast Area Guide, on a three entry, 100 year rotation. Some selected areas were scheduled for 4 entries in 120 years (LUD IV) and 6 entries in 200 years (LUD III) for visual considerations. A three entry rotation assumes the first entry will be made within 30 to 40 years. If areas are not entered, and the ASQ is harvested, other areas will have to receive a heavier entry, resulting in a pattern of high percentage first entries being established, and therefore creating conditions under which the three-entry rotation may not be achievable.

The TLMP as amended also scheduled as anticipated management outputs from the Tongass National Forest timber volume ranging from 300 million to 450 million annually (Tongass Land Management Plan Amended Winter 1985-86, page 4).

### **Revised Supplemental TLMP Revision Draft EIS (TLMP RSDEIS)**

1. Sufficient Volume for Long Term Contract and Independent Timber Sale Program Needs in TLMP RSDEIS.

The TLMP RSDEIS Chapter 3 section on timber (pages 3-166, 167 and 168) provides the following summary statements in terms of the timber supply and the long-term timber sale programs.

The total projected output varies from 0 MMBF in Alternative 1 to 282 MMBF in Alternative 7; the NIC I component varies from 0 to 252 MMBF. Alternatives 7 and 9 appear to have the capability of satisfying contractual planning needs. However, the remaining alternatives may jeopardize the Forest Service's ability to satisfy the contract planning needs from the contract area; volume would probably have to be obtained from elsewhere on the Forest... There appears to be sufficient additional volume from Chatham and Stikine in Alternatives 2, 3 6 and 8 to meet contractual planning needs. Alternatives 1, 4 and 5 still appear to jeopardize the Forest Service's ability to meet its contract planning needs.

The available NIC I ASQ portions of Alternatives 2, 6, 7, 8 and 9 are sufficient to meet the 100 MMBF SBA goal. Alternative 3 could support a reduced SBA goal. Alternatives 1, 4 and 5 could not supply any timber beyond the KPC amount.

These statements indicate that timber supply exceeds the level which is required to satisfy the long-term timber sale contract in alternatives 2, 3, 6, 7, 8 and 9 with additional timber available for independent sales. The data to support these statements is displayed in Table 3-66 on page 3-167, Table 3-67 on page 3-167 and Table 3-68 on page 3-168 of TLMP RSDEIS.

Furthermore, TLMP RSDEIS estimates the number of acres of tentatively suitable lands that are scheduled to be harvested over the planning horizon for each Management Area. The following Table displays the results of that analysis for the preferred alternative. This table indicates that the scheduling of the Lab Bay Project Area and other project areas within and outside the KPC sale area and contingency area to meet contract volume requirements over the next several years is anticipated. In addition, this table shows that there are adequate suitable acres in these Management Areas, scheduled to be harvested, to provide that volume. It displays, for the preferred alternative, the scheduled suitable acres by Management Area. Table 9 is similar to Table 8 which showed the Management Areas scheduled for timber harvest. A comparison of these two tables indicates that the Management Areas identified as appropriate for timber harvest activities in the existing TLMP (as amended winter 1985-86) are also identified as appropriate in the preferred alternative of TLMP RSDEIS.

**Table 9**  
**TLMP RSDEIS Preferred Alternative Scheduled Acres (selected Management Areas)**

<b>Management Area</b>	<b>Acres Scheduled</b>	<b>Existing Harvest</b>	<b>Percent Harvested</b>
C02	5101	500	10
C03	4413	78	2
C07	1310	0	0
C10	8002	874	11
C13	22148	0	0
C14	23291	0	0
C15	4309	1509	37
C17	78	0	0
C18	888	0	0
C19	5621	1167	21
C27	2042	240	12
C28	10895	548	5
C29	10446	1795	17
C30	24442	5344	22
C31	17760	4250	24
C32	2320	500	22
C33	2711	78	3
C34	14441	999	7
C37	32456	10388	32
C39	3700	38	1
C40	10919	1493	14
C41	19036	3893	20
C43	3648	888	25
C44	12945	3546	27
C46	684	194	28
C48	680	0	0
C53	15275	7197	47
C54	1586	1022	64
CHATHAM TOTAL	261047	46622	18

Table 9 (continued)

## TLMP RSDEIS Preferred Alternative Scheduled Acres (selected Management Areas)

Management Area	Acres Scheduled	Existing Harvest	Percent Harvested
S01	9124	0	0
S04	54806	18257	33
S07	9172	260	3
S08	3483	0	0
S09	22256	1650	7
S10	21861	3038	14
S11	27349	6786	25
S13	26820	2725	10
S14	218	0	0
S16	13036	2771	21
S17	20543	5663	28
S18	1918	1278	67
S19	32225	10052	31
S20	10694	1170	11
S21	3180	2300	72
S22	4020	884	22
S23	22779	3885	17
S24	1742	277	16
S25	22583	4648	21
S26	10743	100	1
S29	5426	2668	49
S31	2928	0	0
S32	304	140	46
S33	7215	1177	16
S35	11248	3455	31
STIKINE TOTAL	345673	73184	21



Table 9 (continued)

## TLMP RSDEIS Preferred Alternative Scheduled Acres (selected Management Areas)

Management Area	Acres Scheduled	Existing Harvest	Percent Harvested
K01	16078	7414	46
K02	1844	872	47
K03	21030	11996	57
K04	5160	2459	48
K05	17681	11810	67
K07	40117	23194	58
K08	23347	9539	41
09	23150	14113	61
K10	9199	3275	36
K11	14195	9793	69
K14	16935	1275	8
K15	11210	3082	27
K17	16358	8181	50
K18	18474	4803	26
K19	2204	0	0
K20	7385	1065	14
K21	8969	694	8
K22	2314	0	0
K24	6475	1101	17
K25	10239	0	0
K28	1947	0	0
K29	8871	152	2
K30	16571	919	6
K32	32776	7598	23
K34	1098	0	0
K35	18865	4657	25
K39	7316	458	6
K44	499	0	0
KTN. TOTAL	360307	128450	36

## 2. Cumulative Effects

The TLMP RSDEIS considers the cumulative effects for forest-wide acres managed for timber production for both the long-term and short-term timber sale programs. These effects are discussed at the end of their respective sections.

Analysis points to the need to schedule harvest in VCUs assigned management prescriptions which permit consideration of timber harvest, including the VCUs within the Lab Bay Project Area. These VCUs in the current Forest plan, and in the draft revised Forest Plan would be needed to help meet KPC Contract volume needs, and TLMP and TTRA timber supply objectives. The forest-wide cumulative effects analysis in the TLMP RSDEIS supports the conclusion that this harvest can be accomplished within existing and proposed revised TLMP standards and guidelines and other requirements for resource protection.

## 3. Subsistence

With the passage of the ANILCA, Congress recognized the importance of subsistence resources to rural residents of Alaska. In particular, prior to any disposition of public lands, an agency must first complete a subsistence effects evaluation, including consideration of the availability of other lands (ANILCA 810 (a)).

Based on a review of available harvest volumes for each VCU in the KPC Sale Area and Contingency Area, it appeared that in order to meet contract volume commitments, most of the LUD III and IV VCUs would need some level of harvest prior to the end of the KPC contract in 2004. In addition, some volumes from outside of the primary and contingency sale areas would also need to be made available to KPC contractual obligations. A tentative offering schedule was developed and approved for implementation based on this analysis. In short, almost all LUD III and IV VCUs in the KPC Long-term Sale Area and Contingency Area as well as those outside the Sale Area would be scheduled for harvest by the year 2004, indicating a level of impact to all subsistence use areas. However, the most significant impacts on the subsistence resource habitat would not occur until 20 to 30 years after the timber harvest when the second growth canopy closes. When those impacts to subsistence resources are viewed from a reference point 20 years in the future, the particular importance of which areas are scheduled first during a 5-year period appears to be minor. In considering communities that may be most affected by any proposed timber harvest in the Lab Bay Project Area, Coffman Cove, Craig, Klawock, Point Baker, Port Protection, Whale Pass and Wrangell appear to have the strongest cultural and subsistence ties to the area. Each community has its own level of reliance on subsistence as well as its own level of reliance on the Lab Bay Project Area for supplying subsistence resources. The following information about each communities subsistence use is a summary of more detailed information provided in chapter 3 of the Lab Bay Project EIS.

**Coffman Cove** Nineteen percent of Coffman Cove's deer came from the Project Area WAAs between 1988 and 1991. Analysis shows that there is an adequate number of deer to meet the current subsistence demand for deer now; however, at some point in the future it may be necessary to restrict the sport harvest of deer and give the rural communities preference.

**Craig** Nine percent of Craig's deer came from the Project Area WAAs between 1988 and 1991. Analysis shows that there is an adequate number of deer to meet the current subsistence demand for deer; however, at some point in the future it may be necessary to restrict the sport harvest of deer and give rural communities preference.



**Klawock** Eleven percent of Klawock's deer came from the Project Area WAAs between 1988 and 1991. Analysis shows that there is an adequate number of deer to meet the current subsistence demand for deer now; however, at some point in the future it may be necessary to restrict the sport harvest of deer and give rural communities preference.

**Point Baker** Eighty-two percent of Point Baker's deer came from the Project Area WAAs between 1988 and 1991. Analysis indicates that additional reductions in habitat capability will likely require restrictions on non-subsistence hunters in the future in WAAs 1528 and 1529.

**Port Protection** Records indicate 100 percent of Port Protection's deer came from the Project Area WAAs between 1988 and 1991. Analysis indicates that additional reductions in habitat capability will likely require restrictions on non-subsistence hunters in the future in WAA 1529.

**Whale Pass** Sixty-four percent of Whale Pass' deer came from the Project Area WAAs between 1988 and 1991. Analysis shows that there is an adequate number of deer to meet the current subsistence demand for deer now; however, at some point in the future it may be necessary to restrict the sport harvest of deer and give rural communities preference.

**Wrangell** Eighteen percent of Wrangell's deer came from the Project Area WAAs between 1988 and 1991. Analysis indicates that additional reductions in habitat capability will likely require restrictions on non-subsistence hunters in the future in WAAs 1528 and 1529.

As a result of several considerations, including the availability of subsistence resources in undisturbed areas of Prince of Wales Island, including LUD I and LUD II areas within or adjacent to the Project Area, the relative independence of most communities from subsistence resources in the Project Area, as well as analysis contained in the Tongass Land Management Plan RSDEIS, the Forest Service determined to schedule an environmental analysis of the Lab Bay Project Area. Other projects including Sea Level, North Revilla, Port Stewart, Vixen Inlet, Central Prince of Wales, Ratz Harbor, Heceta Island, and Chasina are being implemented, or, will undergo environmental analysis within the next 3 to 5 years.

Extensive forestwide cumulative effect analysis has been included in the TLMP RSDEIS (TLMP SDEIS pages 3-628 through 3-765 and TLMP RSDEIS pages 3-328 through 3-441). That analysis, and the tables of data shown in appendix K of TLMP SDEIS and the maps shown in appendix c of the TLMP RSDEIS are incorporated by reference into this document. The data in appendix K and L indicates subsistence hunting of deer and other uses in virtually every area of the Tongass with substantial quantities of harvestable timber. The following information is extracted directly out of the Tongass Land Management Plan Revision, Supplement to the Draft Environmental Impact Statement, pages 3-762 and 3-763:

In conducting the subsistence evaluation it is determined that, in combination with other past, present and reasonably foreseeable future actions, none of the alternatives would pose a significant possibility of significant restriction for salmon, other finfish, marine mammals, invertebrates, plants, mountain goat, moose, waterfowl, sea birds, or other small game. Together these resources account for an average of 79 percent of the total harvest of subsistence resources (Kruse and Muth, 1990).

In considering the impacts of future actions that may take place under the proposed alternatives on deer, two types of analysis was conducted. Potential effects were first determined for those WAAs where residents have successfully harvested deer, then for those WAAs where residents have ever gone to harvest deer. Both 10 percent and 20 percent harvest levels of the deer population were used.



Considering only those WAAs where residents successfully harvested deer and assuming a harvest level of 10 percent of the population, there would be sufficient deer in all alternatives for the next 50 years to meet all subsistence needs for all communities except Gustavus, Hoonah, Kake, Pelican, Sitka, and Yakutat (appendix K). For these communities, there would be insufficient habitat capability to support harvest by all subsistence users (regardless of the community of origin). However, at 20 percent of the population, all subsistence needs for these communities would be met by all alternatives for the next 50 years (appendix K).

If instead of considering only those WAAs in which hunters were successful, we consider all WAAs ever hunted by community residents, then there would be sufficient deer habitat capability to support all subsistence hunters in the WAAs used for hunting by all subsistence communities except for Pelican and Gustavus. If instead of assuming a 10 percent harvest level, a 20 percent harvest level is used, there would be sufficient habitat capability to support all subsistence harvest in all WAAs used for hunting by all subsistence communities.

As a result of the analysis of the impacts of projects that would be permissible under each of the alternatives considered for adoption in the Forest Plan, it has been determined that all of the alternatives, if all permissible projects were fully implemented, have the potential to impact subsistence uses of deer, brown bear, and furbearers (specifically martens) due to potential effects of projects on abundance/distribution, and competition.

The analysis shown in chapter 3 of this Project EIS is supported by the analysis shown above in the TLMP RSDEIS. The conclusion stated above, "it has been determined that all of the alternatives, if all of the permissible projects were fully implemented, have the potential to impact subsistence uses of deer. . .", supports the conclusion that any environmental analysis area within the Tongass would have a similar chance of having a significant possibility of a significant restriction on subsistence resources for Sitka Black-tailed deer, and other mammals.

The analysis for ANILCA section 810 are shown in the Subsistence section of chapter 3, in this EIS. The determinations made from the ANILCA section 810 analysis and findings will be a part of the Record of Decision for this project.

## **Forest Plan Implementation**

### **Review of Available Volume**

A review was conducted of each Management Area for available volume. This analysis was based on computer inventories and Allowable Sale Quantity (ASQ) calculations from TLMP Draft Revision (1996).

All areas allocated to LUD III or IV under the current TLMP, as amended, and all areas available for timber harvest under the revised TLMP can be expected to be entered for substantial timber harvest sometime in the future if the plan is to be fully implemented. The review used the following guidelines to identify likely areas to schedule for environmental analysis in the near future:

- (1) Evaluate by area the total available volume within the suitable land base.
- (2) Identify a tentative ten year sale schedule which addresses volume to be offered.
- (3) Prepare a schedule of environmental analysis areas which shows how the Tongass will proceed through the end of ten year sale schedule.

The results of the first step by the working group analysis are presented in table 10. The results of this volume review, further supported by TLMP revision information, provided the basis for scheduling the next series of environmental analyses.

**Table 10**  
**Available Volume By Project**

Timber Project Location and Projected Volume	Projected Volume	Tent. Suitable Acres	Previous Harvest Acres	Projected Project Acres
<b>Chatham Area</b>				
89 SEIS Analysis Area 2 VCUs 193;198 200;201;202;222;223		15,998	2,583 (16.2%)	1,305 (8.2%)
Kelp Bay EIS VCUs 291-294; 296-298; 314-315	117MMBF	22,584	4,781 (21.2%)	4,238 (18.8%)
Southeast Chichagof EIS MA 29;33;34; 36;37;37a & VCU 227-247	130MMBF	58,054	13,260 (22.8%)	3,765 (6.5%)
Ushk Bay EIS VCUs 279-281	67MMBF	5,070	38 (0.8%)	2,166 (42.7%)
Eight Fathom EIS VCUs 193-198; 200-202	130MMBF	16,645	1,806 (10.9%)	3,498 (21.0%)
Northwest Baranof EIS VCUs 287-292; 299-302	66MMBF	17,936	3,307 (18.4%)	2,500 (13.9%)
Port Houghton EIS VCUs 79-89	93MMBF	32,415	0 (0.0%)	3,100 (9.6%)
Indian River EIS VCUs 220-222	20MMBF	5,688	1,277 (22.5%)	660 (11.6%)
Whitestone EIS VCUs 205; 207-211	30MMBF	15,241	3,476 (22.8%)	900 (5.9%)
Moore Mountains EIS VCUs 227-246	67MMBF	48,118	11,465 (23.8%)	2,010 (4.2%)
Kennel Creek EIS VCUs 215-218	36MMBF	19,178	4,604 (24.0%)	1,170 (6.1%)
Windham EIS VCUs 68-70; 72-74	50MMBF	16,236	0 (0.0%)	1,500 (9.2%)
W.Baranof/Kruzof EIS VCUs 287; 299; 300;301;312;313;318-324	41MMBF	8,084	1,374 (17.0%)	1,400 (17.3%)
Upper Tenakee EIS VCUs 202; 224-226	33MMBF	5,801	1,018 (17.6%)	990 (17.1%)
Neka Heli EIS VCUs 193-198; 200-201	37MMBF	12,973	788 (6.1%)	1,110 (8.6%)

Port Houghton II EIS VCUs 79-84	34MMBF	23,291	0 (0.0%)	1,020 (4.4%)
Couverden/Mansfield VCUs 116-123; 125-132	24MMBF	5,640	1,167 (20.7%)	720 (12.8%)
<b>Stikine Aea</b>				
North & East Kuiu EIS VCUs 398-402; 416-421	120MMBF	77,042	19,907 (25.8%)	5,203 (6.8%)
Bohemia EIS VCUs 424; 442	40MMBF	7,571	400 (5.3%)	1,381 (18.2%)
Campbell EIS VCU 510	8MMBF	830	0 (0.0%)	390 (47.0%)
Shamrock EIS VCUs 429;436;438	44MMBF	17,895	358 (2.0%)	1,500 (8.4%)
King George EIS VCU 462	27MMBF	3,611	240 (6.7%)	750 (20.8%)
Lindenberg EIS VCU 437	46MMBF	7,794	2,126 (27.3%)	1,560 (20.0%)
Canal/Hoya EIS VCUs 520-521	20MMBF	2,098	0 (0.0%)	600 (28.6%)
S. Zarembo EIS VCUs 458-459	20MMBF	15,718	3,854 (24.5%)	660 (4.2%)
S33 EIS VCUs 525-526	22MMBF	3,296	177 (5.4%)	700 (21.2%)
Scott Peak EIS VCUs 443;444;446	20MMBF	14,290	2,638 (18.5%)	600 (4.2%)
Mitkof Sales EIS VCUs 449-450	30MMBF	7,463	2,650 (35.5%)	1,000 (13.4%)
Crystal River EIS VCUs 486;487;489	16MMBF	10,666	3,315 (31.1%)	550 (5.2%)
Etolin EIS VCUs 462-469	50MMBF	21,876	3,885 (17.8%)	1,700 (7.8%)
Mad Critter EIS VCUs 501;502;504	25MMBF	10,723	100 (0.9%)	833 (7.8%)
Woronofski EIS VCU 461	11MMBF	4,006	820 (20.5%)	330 (8.2%)



Cape Fanshaw EIS VCUs 85-89	37MMBF	9,124	0 (0.0%)	1,200 (13.2%)
South Kupreanof EIS VCUs 430-434	28MMBF	10,694	1,170 (10.9%)	840 (7.9%)
Zarembo EIS VCUs 458-459	20MMBF	15,718	3,854 (24.5%)	600 (3.8%)
Woewodski EIS VCU 448	11MMBF	4,006	820 (20.5%)	330 (8.2%)
North Kupreanof EIS VCUs 424;443	22MMBF	9,438	799 (8.5%)	660 (7.0%)
Wrangell EIS VCUs 476-480;505	11MMBF	20,845	4,488 (21.5%)	370 (1.8%)
<b>Ketchikan Area</b>				
Central Prince of Wales EIS VCUs 557; 577;579-590;598-601.1;549.2-554; 571-574	267MMBF	87,529	47,862 (54.7%)	7,870 (9.0%)
North Revilla EIS VCUs 732;733;735-74	200MMBF	26,861	7,051 (26.3%)	6,485 (24.1%)
Polk Inlet EIS VCUs 610-613; 618-622 624;674;675	125MMBF	34,832	12,984 (37.3%)	4,116 (11.8%)
Lab Bay EIS VCUs 527-540;551	40MMBF	34,736	17,361 (50.0%)	1,400 (4.0%)
Control Lake EIS VCUs 574-578; 591-597.2	140MMBF	37,358	11,335 (30.3%)	4,700 (12.6%)
Upper Carroll EIS VCUs 737;744;746	40MMBF	10,076	2,960 (29.4%)	1,400 (13.9%)
Vixin Inlet EIS VCUs 708-710;718; 720;721	40MMBF	7,094	152 (2.1%)	1,400 (19.7%)
Ratz EIS VCUs 572; 579-585	10MMBF	23,150	14,113 (61.0%)	300 (1.3%)
Tuxekan EIS VCUs 554.2;556;557;560; 571	15MMBF	20,472	12,515 (61.1%)	500 (2.3%)
Chasina EIS VCUs 677-681	40MMBF	6,475	1,101 (17.0%)	1,400 (21.6%)
Sea Level EIS VCUs 746;753;755-757; 759	20MMBF	18,845	4,657 (24.7%)	600 (3.2%)
Port Stewart EIS VCUs 713-717;719;	35MMBF	16,571	919	1,200

722;723			(5.6%)	(7.2%)
Moirá EIS VCU 694;695;699; 700-704	40MMBF	10,293	0	1,400 (13.6%)
Chomley EIS VCU 691-693	60MMBF	7,501	0	2,000 (26.7%)
South Prince of Wales EIS VCU 694; 695;699; 700-704	36MMBF	7,565	0	1,200 (15.9%)
North Prince of Wales EIS MA K01;K03 K07;K08	90MMBF	98,812	51,157 (51.8%)	3,000 (3.0%)
Luck Lake EIS MA K08;K09	60MMBF	42,777	21,416 (50.1%)	2,000 (4.7%)
Lower Carroll EIS VCU 744	40MMBF	9,393	1,642 (17.5%)	1,400 (14.9%)
Cleveland EIS MA K29; K30	90MMBF	25,442	919 (3.6%)	3,000 (11.8%)
Dall Island EIS MA K22	25MMBF	2,314	0	750 (32.4%)
Sukkwán EIS MA K21	30MMBF	8,969	694 (7.7%)	1,000 (11.2%)
S. Revilla EIS VCU 743;747;748	20MMBF	6,891	439 (6.4%)	600 (8.7%)
K-15 EIS MA K15	15MMBF	10,102	3,003 (29.7%)	500 (5.0%)
K-32 EIS MA K15	10MMBF	26,861	7,051 (26.3%)	350 (1.3%)

## Analysis Area Reviews

For each area identified as having sufficient volume available to consider for further environmental analysis at this time, a review was conducted to decide which areas to schedule first, considering the current TLMP and proposed revised TLMP schedule, and other resource factors such as amount of past harvesting, log transfer facilities (LTF's) required, amount of road systems in place, amount of additional roads required, if in long term sale contract sale area and wildlife and recreation values. The results of this review appear below:

**Table 11**  
**Available Volume By Project**

Timber NEPA Projects, Location, and Projected Offerings	Projected NEPA Process Dates	Projected Volume MMBF
<b>Chatham Area</b>		
89 SEIS Analysis Area 2 VCU's 193;198; 200;201;202;222;223	11/89 ROD;	
Kelp Bay EIS VCU's 291-294; 296-298; 314-315	3/1/90 NOI;2/92 ROD;	117
Southeast Chichagof EIS MA 29;33;34; 36;37;37a & VCU 227-247	5/2/90 NOI;8/92 ROD;	130
Ushk Bay EIS VCU's 279-281	9/94 ROD;	67
Eight Fathom EIS VCU's 193-198; 200-202	5/22/93 NOI 7/31/95 DEIS;3/96 ROD;	130
Northwest Baranof EIS VCU's 287-292; 299-302	6/1/2/93 NOI 7/21/95 DEIS;3/96 ROD;	66
Port Houghton EIS VCU's 79-89	9/12/94 NOI; 10/95 DEIS; 4/96 ROD;	93
Indian River EIS VCU's 220-222	1/96 NOI; 6/96 DEIS; 12/96 ROD;	20
Whitestone EIS VCU's 205; 207-211	'96 NOI; '96 DEIS; 5/97 ROD;	30
Moore Mountains EIS VCU's 227-246	'97 NOI; '98 DEIS; 1/99 ROD;	67
Kennel Creek EIS VCU's 215-218	'97 NOI; '98 DEIS; 5/99 ROD;	36
Windham EIS VCU's 68-70; 72-74	'98 NOI; '99 DEIS; 01/00 ROD;	50
W.Baranof/Kruzof EIS VCU's 287; 299; 300;301;312;313;318-324	'99 NOI; '00 DEIS; 01/01 ROD;	41
Upper Tenakee EIS VCU's 202; 224-226	'01 NOI; '02 DEIS; 01/03 ROD;	33
Neka Heli EIS VCU's 193-198; 200-201	'01 NOI; '02 DEIS; 05/03 ROD;	37

	'02 NOI;	
Port Houghton II EIS VCUs 79-84	'03 DEIS; 05/04 ROD;	34
	'03 NOI;	
Couverden/Mansfield VCUs 116-123; 125-132	'04 DEIS; 01/05 ROD;	24
<b>Stikine Area</b>		
North & East Kuiu EIS VCUs 398-402; 416-421	6/90 NOI; 1/20/93 ROD;	120
Bohemia EIS VCUs 424; 442	4/95 ROD;	40
Campbell EIS VCU 510	9/29/93 ROD;	8
Shamrock EIS VCUs 429;436;438	5/96 ROD;	44
King George EIS VCU 462	12/93 NOI; 5/96 ROD;	27
Lindenberg EIS VCU 437	7/93 NOI; 4/96 ROD;	46
	'96 NOI;	
Canal/Hoya EIS VCUs 520-521	9/96 DEIS; 12/96 ROD;	20
Houghton/Fanshaw EIS (NEPA shown on Pt. Houghton EIS)		
	'96 NOI;	
S. Zarembo EIS VCUs 458-459	'97 DEIS; 10/98 ROD;	20
	'96 NOI;	
S33 EIS VCUs 525-526	'97 DEIS; 10/98 ROD;	22
	'96 NOI;	
Scott Peak EIS VCUs 443;444;446	'97 DEIS; 10/97 ROD;	20
	'96 NOI;	
Mitkof Sales EIS VCUs 449-450	'97 DEIS; 10/97 ROD;	30
	'96 NOI;	
Crystal River EIS VCUs 486;487;489	'97 DEIS; 10/98 ROD;	16
	'96 NOI;	
Etolin EIS VCUs 462-469	'97 DEIS; 10/98 ROD;	50
	'96 NOI;	
Mad Critter EIS VCUs 501;502;504	'97 DEIS; 10/98 ROD;	35
	'97 NOI;	
Woronofski EIS VCU 461	'98 DEIS; 10/99 ROD;	10
	'97 NOI;	
Cape Fanshaw EIS VCUs 85-89	'98 DEIS; 10/99 ROD;	37
	'98 NOI;	
South Kupreanof EIS VCUs 430-434	'99 DEIS; 10/00 ROD;	28
	'99 NOI;	
Zarembo EIS VCUs 458-459	'00 DEIS; 10/01 ROD;	20
	'00 NOI;	
Woewodski EIS VCU 448	'01 DEIS; 10/02 ROD;	11
	'00 NOI;	



North Kupreanof EIS VCUs 424;443	'01 DEIS; 10/02 ROD;	22
Wrangell EIS VCUs 476-480;505	'00 NOI; '01 DEIS; 10/02 ROD;	20
<b>Ketchikan Area</b>		
Central Prince of Wales EIS VCUs 557; 571-574; 577;579-590;598-601.1; 549.2-554	8/91 NOI; 7/93 ROD;	267
North Revilla EIS VCUs 732;733;735-740	4/91 NOI; 8/93 ROD;	200
Polk Inlet EIS VCUs 610-613; 618-622; 624;674;675	9/91 NOI; 3/95 ROD;	125
Lab Bay EIS VCUs 527-540;551	9/92 NOI; 7/95 DEIS; 8/96 ROD;	40
Control Lake EIS VCUs 574-578; 591-597.2	10/93 NOI; 9/95 DEIS; 6/96 ROD;	140
Upper Carroll EIS VCUs 737;744;746	6/94 NOI; 9/95 DEIS; 6/96 ROD;	40
Vixin Inlet EIS VCUs 708-710;718; 720;721	5/97 NOI; 12/97 DEIS; 12/98 ROD;	40
Ratz EIS VCUs 572; 579-585	5/97 NOI; 12/97 DEIS; 12/98 ROD;	10
Tuxekan EIS VCUs 554.2;556;557;560; 571	5/97 NOI; 12/97 DEIS; 12/98 ROD;	15
Chasina EIS VCUs 677-681	11/95 NOI; 7/96 DEIS; 4/97 ROD;	40
Sea Level EIS VCUs 746;753;755-757; 759	5/96 NOI; 11/97 DEIS; 12/98 ROD;	20
Port Stewart EIS VCUs 713-717;719; 722;723	4/97 NOI; 12/97 DEIS; 12/98 ROD;	35
Moirra EIS VCUs 694;695;699; 700-704	'98 NOI; '99 DEIS; '00 ROD;	40
Chomley EIS VCUs 691-693	'98 NOI; '99 DEIS; '00 ROD;	60
South Prince of Wales EIS VCUs 694; 695;699; 700-704	'99 NOI; '00 DEIS; '01 ROD;	36
North Prince of Wales EIS MA K01;K03; K07;K08	'99 NOI; '00 DEIS; '01 ROD;	90
Luck Lake EIS MA K08;K09	'99 NOI; '00 DEIS; '01 ROD;	60

Lower Carroll EIS VCU 744	'00 NOI; '01 DEIS; '02 ROD;	40
Cleveland EIS MA K29; K30	'01 NOI; '02 DEIS; '03 ROD;	90
Dall Island EIS MA K22	'02 NOI; '03 DEIS; '04 ROD;	25
Sukkwon EIS MA K21	'02 NOI; '03 DEIS; '04 ROD;	30
S. Revilla EIS VCUs 743;747;748	'02 NOI; '03 DEIS; '04 ROD;	20
K-15 EIS MA K15	'02 NOI; '03 DEIS; '04 ROD;	15
K-32 EIS MA K15	'02 NOI; '03 DEIS; '04 ROD;	10

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## Results of Analysis

Upon completion of the above analysis, several project areas were identified and scheduled for environmental analysis first. Those projects were initiated which had a high priority. In addition to project area's relative ability to provide timber, other factors considered in scheduling the Lab Bay Project Area for environmental analysis at this time with an associated, projected approximate timber volume included: (1) this harvest level is consistent with the sale schedule in the TLMP (1979a, as amended); (2) sufficient volume has been determined to be available in the project area; (3) there is a limited road network in place; (4) the number and location of Log Transfer Facilities (LTF's) is sufficient to handle this volume of timber within a three-year time frame; (5) there are existing logging camps within the area to handle this volume; and (6) the current Forest Plan (TLMP 1979a, as amended) provides for harvest in this project area. Harvest in the project area is also consistent with proposed land allocation in the preferred alternative in TLMP Revision RSDEIS.

Substantial changes in timber demand or other circumstances could affect the rate at which various areas proceed through the NEPA process or the timing of actual timber sale offerings, but are not expected to change the sequence for initiating and completing the NEPA process for various areas. Time periods of relatively low market demand provide an opportunity to increase available timber supply in anticipation of cyclical higher demand periods. All areas in which commercial timber harvest is authorized under the existing or revised TLMP are expected to receive some level of timber harvest at some time if the Forest Plan is to be fully implemented. Total environmental impacts viewed in the long term are not expected to differ substantially depending upon the order in which different areas are entered. The "No-Action" Alternative of not proceeding with further harvest at the present is considered in detail in each timber sale project NEPA process. But generally, projects farthest along in the NEPA process are the most efficient and logical to consider for implementation first in order to meet timber supply, timber sale program, and Forest Plan objectives.





# **Appendix B**

## **Units Dropped or Deferred from Unit Pool**



Table B-1

## Units Deferred From Analysis During Paper Plan Development and Initial Field Evaluations

VCU Unit No.	When Removed	Drop / Defer	Logging Feasibility / Cost	Stream & Estuary Buffer	Adjacency Requirement	89-94 Contingency Unit	Visuals	High Hazard Soils	State Selection (Proposed)	Cumulative Watershed	Silvicultural Limits	Proportionality
527-225	A	Defer								X		
529-264	F	Drop		X								
529-273	A	Defer								X		
529-275	A	Defer								X		
529-281	P	Defer			X							
529-283	A	Drop		X								
530-201	F	Drop									X	
530-233	P	Defer			X							
530-253	A	Defer								X		
531.1-201	P	Defer			X							
531.1-202	P	Defer			X							
531.1-204	A	Defer										X
531.1-214	P	Defer	X									
531.1-223	A	Defer										X
531.1-225	P	Defer			X							
531.1-231	A	Defer										X
531.1-232	A	Defer										X
531.1-233	A	Defer										X
531.1-236	F	Defer	X									
531.1-239	A	Drop		X								
531.1-242	A	Drop									X	
531.1-249	F	Drop		X								
531.1-252	A	Drop		X								
531.1-253	A	Defer					X					
531.1-255	A	Defer										X
531.1-256	A	Defer					X					
531.1-258	A	Defer										X
531.1-259	A	Defer										X
532-200	P	Defer	X									
532-201	P	Defer	X									
532-210	F	Defer					X					
532-230	P	Drop		X								
532-232	A	Drop		X								
533-253	A	Drop						X				
534-202	A	Defer										X
534-204	A	Defer										X
534-218	F	Defer				X						
534-224	A	Defer					X					
534-227	A	Defer										X
534-229	A	Defer										X
534-230	A	Defer										X
534-231	F	Defer			X							

# Appendix B

Table B-1, continued

## Units Deferred From Analysis During Paper Plan Development and Initial Field Evaluations

VCU			Logging	Stream &	89-94			High	State			
Unit	When	Drop /	Feasibility /	Estuary	Adjacency	Contingency		Hazard	Selection	Cumulative	Silvicultural	Propor-
No.	Removed	Defer	Cost	Buffer	Requirement	Unit	Visuals	Soils	(Proposed)	Watershed	Limits	tionality
534-232	F	Defer	X									
534.1-201	A	Defer										X
534.1-207	A	Defer										X
534.1-208	F	Defer	X									
534.1-210	F	Defer	X									
535-211	A	Defer										X
535-212	P	Defer	X									
536-201	F	Defer				X						
536-207	P	Defer				X						
536-218	A	Defer										X
536-220	P	Defer				X						
536-223	A	Defer										X
537.1-207	P	Defer				X						
537.1-218	P	Defer					X					
537.1-219	F	Defer				X						
537.1-220	A	Drop							X			
537.1-221	A	Drop							X			
537.1-222	A	Defer										X
537.1-223	A	Defer										X
537.1-225	A	Defer								X		
537.1-226	A	Defer										X
538-202	A	Defer										X
538-216	A	Defer										X
538-218	A	Defer				X						
538-219	A	Defer										X
538-220	A	Defer										X
538-221	P	Defer		X								
538-224	A	Defer										X
538-225	A	Defer										X
539-219	F	Defer				X						
540-202	F	Defer	X									
540-207	F	Defer				X						
551-231	A	Drop		X								
551-234	A	Defer	X									
Total			10	9	14	1	5	1	2	5	2	27

Notes: (1) Some units may have multiple reasons for being dropped/deferred.

When Removed:  
P = Preliminary Planning  
F = Field Studies  
A = Analysis



# **Appendix C**

## **Unit Specific Mitigation Measures**



## Site-Specific Mitigation Measures Incorporated Into Unit and Road Design

Mitigation Measure		No. of Units Affected in Each Alternative				
		2	3	4	5	6
Karst						
K1	Geotechnical investigation, including dye tracing required to evaluate potential adverse effects on recharge area to domestic water supply.	2	0	0	2	0
K2	Modify unit boundary to avoid slopes in excess of 70% or to retain areas of greater than 70% on recharge area to domestic water supply.	12	0	5	8	0
K3	Achieve partial suspension due to steep slopes and/or thin soils on karst.	7	0	4	5	0
K4	Individual tree selection (Harvest Type I) due to high density of significant karst features (caves, vertical shafts, sinkholes, or insurgences).	12	0	3	9	0
K5	Avoid yarding over significant features (caves, vertical shafts, sinkholes, or insurgences).	12	1	8	7	2
K6	Maintain minimum 100-foot windfirm buffers around caves, vertical shafts, and other significant karst features.	34	0	20	21	2
K7	Directionally fall away from significant karst features (caves, vertical shafts, sinkholes, or insurgences)	17	1	7	12	2
K8	Ketchikan Area karst resource specialist should review unit during final layout.	36	1	21	23	3
Roads on Karst						
Kr1	Geotechnical investigation including dye tracing required to evaluate potential adverse effects of road construction on recharge area to domestic water supply.	2	0	0	2	0
Kr2	Geotechnical investigation required to evaluate potential adverse effects of blasting on significant karst features, or to determine stability of road across karst.	4	0	2	3	0
Kr3	Avoid filling or channeling of road drainage into caves, vertical shafts, sinkholes, or insurgences.	18	1	12	9	1
Kr4	Avoid construction over significant karst features (caves, vertical shafts, sinkholes, or insurgences).	14	0	10	8	1
Kr5	Realign road to avoid significant features (caves, vertical shafts, sinkholes, or insurgences).	2	1	1	2	1
Kr6	Road eliminated due to karst concerns.	2	1	2	1	1
Kr7	Proposed road located on moderate or low vulnerability karst is not expected to adversely affect significant karst features. Ketchikan Area karst specialist should review the final road location and design to ensure protection of water quality. Protection measures may include avoiding construction over karst features, prohibiting water diversion to or from karst features, culvert placement and density, sediment retention, erosion prevention, or restrictions on blasting locations.	4	1	4	3	3
Minerals						
M1	Protect all known mineral improvements, such as mine claim markers.	1	1	1	1	0
M2	Reasonable access will be provided for mining claims.	6	5	6	6	3



## Site-Specific Mitigation Measures Incorporated Into Unit and Road Design

Mitigation Measure		No. of Units Affected in Each Alternative				
		2	3	4	5	6
Fish, Water Quality, and Soils						
F1	Modify unit boundaries/design to avoid very high mass movement areas and areas dominated by thin organic soils, or to minimize soil displacement, erosion, and sedimentation into streams. (BMP's 13.2, 13.5)	63	40	41	42	27
F2	Avoid road construction in areas of very high mass movement potential (BMP's 14.2, 14.7).	2	2	0	1	1
F3	Require partial to full suspension logging systems to minimize high mass movement potential, and implement measures to minimize soil disturbance, erosion, or sedimentation into streams including seeding, slashing, or other stabilization measures (BMP's 12.7, 13.5, 13.7, 13.9, 13.12).	62	43	42	41	30
F4	Modify logging system to avoid or minimize damage to designated streams, muskegs or other wetlands (BMP's 12.5, 13.2, 13.3, and 13.15).	23	14	17	14	4
F5	Establish no-harvest and selective-cut buffers a long streams and around lakes to protect riparian management areas, fisheries, or for protection of temperature sensitive streams (BMP 12.6).	44	31	27	28	15
F6	Require split yarding and/or directional felling along selected Class III streams without buffers to maintain streambank stability and prevent sedimentation into stream channel (BMP 13.16).	23	19	13	17	12
F7	Implement measures to reduce surface erosion and drainage interruption related to transportation including water barring and cross-draining roads using ditches and culverts to prevent water running long distances over roads, closure, seeding and fertilizing cut and fill slopes, and locating and designing landings for good drainage and dispersion of water (BMP's 12.7, 12.11, 13.10, 14.3, 14.5, 14.8, 14.9, 14.10, 14.11. 14.12, 14.13)	46	29	35	31	24
F8	Establish timing restrictions for instream road construction activities for protection of anadromous and resident fish in Class I, Class IIa, and other designated streams. Includes in channel operations, stream crossings on temporary roads, bridge and culvert design and installation. (BMP's 14.6, 14.10, 14.14, 14.16, 14.17).	43	24	27	30	16
F9	Implement BMP's for protection of water quality, riparian areas, and fisheries habitat on all stream crossings including riparian area protection, streambank protection, stream channel protection, road closure, and timely implementation of erosion control measures (BMP's 12.6, 12.7, 12.11, 13.16, 14.9, 14.11).	49	28	32	31	20
F10	Retain timber within High Gradient Contained stream RMA's within and adjacent to units to avoid exceedance of HGC harvest threshold.	11	9	4	10	3
Vegetation and Timber						
T1	Conduct partial-cut harvesting to provide shelter and retain a seed source in the unit, and/or to help maintain the cedar component in the future stand.	5	5	4	3	4
T2	Retain at least 2 yellowcedar trees per acre to provide an additional seed source within the unit.	18	18	1	18	1
T3	Implement measures such as retention areas or partial cutting to reduce regeneration concerns due to high elevation, low site productivity, shallow or saturated soils.	14	4	6	10	2



## Site-Specific Mitigation Measures Incorporated Into Unit and Road Design

Mitigation Measure		Description	No. of Units Affected in Each Alternative				
			2	3	4	5	6
Wildlife							
W1	Provide for greater structural diversity on a stand level by retaining a minimum level of snags and green tree replacements. Typically, the minimum level will be met by retaining trees along unit boundaries and between settings where conditions allow. Identified for third and fourth order watersheds that currently meet or exceed the minimum snag density guidelines, and are not adjacent to extensive past harvest (Concern Level 1).	97	61	57	67	36	
W2	Provide for greater structural diversity on a stand level by retaining a minimum level of snags and merchantable green tree replacements throughout the rotation. Typically, the minimum level will be met by retaining trees along stand edges and between setting boundaries, or within leave tree islands where conditions allow. Identified for third and fourth order watersheds that are at or near the minimum snag density guideline, or are adjacent to extensive past harvest (Concern Level 2).	18	15	12	12	8	
W3	Provide for greater structural diversity on a stand level by retaining a minimum level of snags and merchantable green tree replacements throughout the rotation. Typically, the minimum level will be met by retaining leave tree islands or by partial cut prescription where conditions allow. Identified for third and fourth order watersheds that are currently below the minimum snag density guideline, or are adjacent to extensive past harvest (Concern Level 3).	9	6	9	5	3	
W4	Restrict the timing of helicopter logging and/or helicopter flight paths and road construction blasting near bald eagle nest sites when occupied. During final layout identify those eagle nests that are in close proximity to harvest units and ensure maintenance of buffer zones.	16	10	11	12	4	
W5	Harvest units that are within high probability goshawk habitat or where past sightings have occurred. In 1995, goshawk surveys were conducted for 48 unites, including high probability and past sighting units. Implement Region 10 management guidelines per 1996 TLMP Draft Revision, as appropriate, if nesting is identified.	41	36	24	28	15	
W6	Implement road closures immediately after harvest to minimize human disturbance to wildlife and road access by hunters in specific areas.	104	74	67	70	39	
W7	Evaluate potential for disturbance and restrict harvest and road construction activities in areas and during time periods when Vancouver Canada Goose nesting or trumpeter swan wintering may be disturbed.	18	13	13	9	7	
W8	Consult with District Wildlife Biologist regarding timing of harvest and road construction.	3	3	1	3	1	
W9	Restrict Forest Service authorized boat traffic and aircraft flights in the vicinity of the Steller sea lion haulout at Kasaan Point on Grindall Island.	*	*	*	*	*	
W10	Restrict Forest Service authorized boat traffic and aircraft flights in the known vicinity of humpback whales and properly dispose of cables from inactive LTF sites.	*	*	*	*	*	
Visual Resources							
V1	Modify boundary of harvest unit to meet proposed VQO's.	5	3	2	5	1	
V2	Conduct partial cutting of unit to minimize visual contrast with adjacent areas.	6	4	4	5	4	

## Site-Specific Mitigation Measures Incorporated Into Unit and Road Design

Mitigation Measure	Description	No. of Units Affected in Each Alternative				
		2	3	4	5	6
V3	Leave behind all nonmerchantable trees after clearcutting to minimize visual contrast with adjacent areas.	1	0	2	0	1
V4	Conduct partial cutting along harvest unit and setting boundaries to reduce visual contrast with adjacent areas.	10	6	6	9	3
V5	Manage views by maintaining islands or strips of trees to visually screen harvest units from saltwater or roadside where appropriate.	22	11	9	16	2
<b>Cultural Resources</b>						
C1	Provide for mitigation of indirect effects to cultural resource sites near proposed harvest units and roads.	1	1	1	1	1

Source: Project Planning Record

\* Applies to project level implementation

[illegible]



[illegible]



[illegible]



# **Appendix D**

## **Harvest Type Descriptions and Harvest Information**

# Abstract

This paper presents a study on the effects of various factors on the performance of a system. The results show that the system's performance is significantly affected by the input parameters, and the proposed model provides a good fit to the observed data.



# Harvest Type Descriptions and Harvest Information for the Lab Bay Project Area

<b>Type A</b>	Clearcut which leaves unmerchantable trees and safe snags within 50 to 100 feet of unit edges and between internal setting boundaries. Prescribed in landscape zones where there are few structural concerns, or where windthrow, disease, and/or logging systems make partial cutting unfeasible.
<b>Type B</b>	Clearcut which leaves some merchantable reserve trees and all unmerchantable trees along the unit edges and between internal setting boundaries. Prescribed in landscape zones where structural concerns exist, but windthrow, disease, and/or logging systems make partial cutting unfeasible. Also used outside of critical landscape zones where previous harvest has left little structure in the area. Selection of leave trees is based on windfirmness and logging safety standards. Leave trees along unit boundaries are retained in a range of size classes to provide for a multi-storied canopy condition and reduce the potential for windthrow.
<b>Type C</b>	Clearcut which leaves unmerchantable trees and safe snags throughout unit. Generally prescribed only where helicopter yarding is used.
<b>Type D</b>	Clearcut where groups or strips are retained between patches of clearcut timber. Strips are spaced relatively evenly across the area and typically may be harvested once regeneration has reached the LUD's specified height and stocking requirements. Groups typically will be left throughout the rotation to serve as wildlife islands and/or increase structural diversity. Prescribed in landscape zones where visual, wildlife and/or structural concerns exist, but windthrow, disease, and/or logging systems make partial cutting unfeasible. Reserve tree islands typically would occur in areas where there are resource concerns or where visual screening would be enhanced.
<b>Type E</b>	Overstory removal will generally remove the larger size/height classes down to a specific diameter limit in order to manage a viable understory. Designed to release advance regeneration and enhance future structural diversity. Prescribed in areas where good advance regeneration exists, where windthrow limits partial cutting feasibility, and/or where retention may benefit wildlife, visual, or slope and soils concerns.
<b>Type F</b>	Seedtree harvest which will retain dominant and co-dominant trees in clumps or scattered across the unit to provide an additional seed source in order to enhance regeneration stocking and/or species diversity. Prescribed in landscape zones where there are structural concerns and low windthrow potential; and where desirable species are available to enhance species stocking and/or diversity. Trees may be retained throughout the rotation but typically may be removed after the regeneration stocking and height is sufficient to meet stocking requirements if other resource concerns permit.
<b>Type G</b>	Shelterwood harvest where 30% of the merchantable tree canopy is left scattered across the unit to provide a partially shaded micro-environment. Intentions include additional thermal protection and seed source. Prescribed in landscape zones where there are structural concerns and/or partial retention VQO and high VAC. Trees may be retained throughout the rotation but typically may be removed after the regeneration stocking and height is sufficient to meet visual and stocking requirements if other resource concerns permit.

## Type H

Shelterwood harvest where 50% of the merchantable tree canopy is left scattered across the unit to provide a partially shaded micro-environment. Intentions include additional thermal protection and seed source. Prescribed in landscape zones where there are structural concerns and/or partial retention VQO and low VAC. Trees may be retained throughout the rotation but typically may be removed after the regeneration stocking and height is sufficient if other resource concerns permit.

## Type I

Group selection and/or single tree selection; techniques to achieve uneven-aged structural management objectives by removal of trees in all size classes either singly or in groups. Prescribed in landscape zones where there are significant structural concerns, within selective harvest lake buffers, or where high elevation regeneration concerns exist. Individual tree selection or carefully designed groups are designed to meet retention VQO and typically will be applied by helicopter logging systems.

Silvicultural System	Harvest Type Designation	Canopy Retention (%)	Unit Volume Reduction (%)
Clearcut	Type A	5	0
Clearcut	Type B	5	5
Clearcut	Type C	5	0
Clearcut (strip or group)	Type D	5-50	5-50
Overstory Removal	Type E	10-15	10
Seed Tree	Type F	10-15	10
Shelterwood	Type G	30	30
Shelterwood	Type H	50	50
Group/Single Tree Selection	Type I	40-75	40-75

Table D-1

**Acres of Proposed Harvest by Harvest Type**

Unit	Acres by Harvest Type									Total Acres	Unit Volume Retention %	Total Unit Volume (MBF)
	Type A	Type B	Type C	Type D	Type E	Type F	Type G	Type H	Type I			
527-206		40.6		8.7				20.4		69.7	19	1,696
527-224				35.6						35.6	15	977
527-226		44.0			7.7					51.7	6	1,555
527-227									6.6	6.6	40	115
527-228									55.4	55.4	65	570
527-229				25.8						25.8	15	610
528-204						13.7				13.7	10	298
528-212			11.8							11.8	0	327
528-213				13.1						13.1	15	367
528-250	4.2			33.8						38.0	31	687
528-251		22.7								22.7	5	655
528-280		41.9								41.9	5	836
529-202		79.7		8.7						88.4	8	2,154
529-212				14.3	18.1					32.4	12	769
529-214		13.2		11.9	10.2					35.2	10	765
529-215				14.8				9.1		23.9	21	469
529-218									12.1	12.1	65	77
529-220				35.2						35.2	15	536
529-223		18.5								18.5	5	483
529-249	12.4									12.4	0	242
529-256		14.9								14.9	5	178
529-257	7.1									7.1	0	118
529-259		16.6								16.6	5	380
529-270				108.8						108.8	15	3,250
529-282	27.9									27.9	0	672
529-284						20.0				20.0	10	223
529-285	34.1									34.1	0	865
529-286		38.3								38.3	5	1,596
530-200						17.4				17.4	10	205
530-203			11.2							11.2	0	167
530-226				60.2						60.2	15	1,622
530-228	24.9			10.7						35.6	5	1,147
530-230				26.0				2.1		28.1	18	670
530-234		45.2								45.2	5	1,049
530-236		14.0								14.0	5	311
530-240				38.7						38.7	15	572
530-241		33.6								33.6	5	1,401
531.1-205		31.4	37.2							68.6	2	1,891
531.1-208				47.0						47.0	15	999
531.1-213									87.9	87.9	50	1,295
531.1-220				21.6						21.6	15	561
531.1-221		10.4								10.4	5	222
531.1-229									47.9	47.9	60	529
531.1-230		45.6		30.5						76.1	9	2,081



# Appendix D

Table D-1(continued)

## Acres of Proposed Harvest by Harvest Type

Unit	Acres by Harvest Type									Total Acres	Unit Volume Retention %	Total Unit Volume (MBF)
	Type A	Type B	Type C	Type D	Type E	Type F	Type G	Type H	Type I			
531.1-235									19.1	19.1	75	63
531.1-241			55.3							55.3	0	740
531.1-242						26.5				26.5	10	310
531.1-257	5.6									5.6	0	163
532-219						38.2				38.2	10	492
532-220						21.8				21.8	10	222
532-221	21.4									21.4	0	270
532-223						25.1				25.1	10	275
532-228				30.6						30.6	15	774
532-229				54.2						54.2	15	1,231
532-231						42.7				42.7	10	914
533-201		25.1		93.9						118.9	13	3,300
533-205				71.7						71.7	14	1,714
533-222		63.2			14.1					77.4	6	1,832
533-224				52.1						52.1	15	1,060
533-228		39.3								39.3	5	1,032
533-229									26.6	26.6	50	173
533-245		28.1							13.8	41.9	17	1,156
533-246		49.0								49.0	5	1,849
533-247				68.5						68.5	10	1,803
533-248				28.9						28.9	10	755
533-249	15.9									15.9	0	473
533-250	32.6									32.6	0	749
533-251		47.3								47.3	5	1,251
533-252									43.1	43.1	50	668
533-254									10.0	10.0	50	157
533-255									8.8	8.8	50	121
533-256									4.0	4.0	50	52
533-257									11.2	11.2	50	186
533-258									10.4	10.4	50	166
533-259									9.9	9.9	50	156
534-218		38.0								38.0	5	872
534-225		37.3								37.3	5	803
534-226				40.7						40.7	10	487
534-228				51.5						51.5	15	970
534.1-204		10.2								10.2	5	136
534.1-211	35.4									35.4	0	774
534.1-212		37.3								37.3	5	993
535-204				39.2						39.2	10	463
535-205				33.9						33.9	10	404
535-207	8.6									8.6	0	126
535-208				69.3						69.3	20	1,229
535-209				36.8						36.8	20	642
536-208		35.1		24.9						60.0	11	901
536-209								39.8		39.8	30	803



Table D-1 (continued)

**Acres of Proposed Harvest by Harvest Type**

Unit	Acres by Harvest Type									Total Acres	Unit Volume Retention %	Total Unit Volume (MBF)
	Type A	Type B	Type C	Type D	Type E	Type F	Type G	Type H	Type I			
536-211				29.6						29.6	50	461
536-217				28.7					61.4	90.1	42	936
537.1-208	25.3									25.3	0	612
538-208		20.5								20.5	5	407
538-210								30.8		30.8	30	383
538-223				32.9						32.9	15	754
539-206		18.8								18.8	5	232
539-210			63.8							63.8	0	1,197
539-215				31.5						31.5	15	339
539-220		28.3								28.3	5	360
539-221	27.2			20.0						47.2	6	549
539-222					82.8					82.8	10	1,507
540-206					25.3					25.3	10	320
540-210					26.2					26.2	10	518
540-221		29.5								29.5	5	366
540-223	33.5	7.7		26.9						68.1	5	854
540-224		39.4								39.4	5	405
540-225		38.1								38.1	5	814
551-201							17.6			17.6	30	163
551-205							71.5			71.5	30	1,064
551-207	35.3									35.3	0	435
551-209	7.6									7.6	0	209
551-211				29.1						29.1	15	431
551-213					17.3					17.3	10	227
551-214				13.0						13.0	10	142
551-216				53.1						53.1	20	736
551-219				16.3						16.3	15	339
551-220				39.2						39.2	10	446
551-223	29.3									29.3	0	535
551-224		71.2								71.2	5	1,423
551-227				87.0						87.0	40	1,186
551-230				31.2						31.2	15	379
551-261									20.8	20.8	40	119
551-263		20.5								20.5	5	393
551-267	28.9									28.9	0	385
551-268		30.5								30.5	5	350
551-999*		218.0								218.0	0	3,922
<b>Total</b>	<b>417.1</b>	<b>1225.0</b>	<b>179.4</b>	<b>1680.2</b>	<b>201.7</b>	<b>205.4</b>	<b>168.9</b>	<b>22.5</b>	<b>449.1</b>	<b>4549.3</b>		<b>89,875</b>

\* Alt. 4 Thorne Island Uneven-aged Management

These tables provide an overview of the distribution of harvest areas across the Project Area for each Volume Class and Alternative.

# Appendix D

Table D-2

## Proposed Harvest of Volume Class by VCU for Alternative 2

VCU	Volume Class 4		Volume Class 5		Volume Class 6	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	19	3.9	61	5.2	156	6.5
528	33	4.2	47	4.5	58	10.2
528.1	0	0.0	0	0.0	0	0.0
529	141	6.6	213	8.1	59	3.1
530	70	4.0	80	5.4	92	6.1
531.1	111	4.3	323	9.0	2	0.1
531.3	0	0.0	0	0.0	0	0.0
532	88	6.2	46	3.1	47	5.3
533	67	4.7	475	11.7	128	8.7
534	68	5.1	87	3.6	0	0.0
534.1	16	3.8	56	22.7	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	125	11.4	66	10.0	0	0.0
536	91	10.0	104	9.7	5	0.7
537.1	0	0.0	17	2.0	0	0.0
538	21	3.0	48	7.4	4	0.8
539	150	8.5	63	4.6	0	0.0
540	167	9.0	36	6.8	0	0.0
551	325	14.1	207	15.5	0	0.0
<b>Total</b>	<b>1,494</b>	<b>6.0</b>	<b>1,928</b>	<b>6.5</b>	<b>552</b>	<b>3.3</b>

VCU	Volume Class 7		Undesignated*		Total	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	7	2.9	2	2.2	245	4.0
528	0	0.0	3	0.3	141	3.2
528.1	0	0.0	0	0.0	0	0.0
529	99	6.7	25	0.8	538	3.6
530	33	12.1	8	0.2	283	2.7
531.1	0	0.0	19	0.4	455	2.9
531.3	0	0.0	0	0.0	0	0.0
532	13	2.1	40	0.8	234	1.6
533	69	16.9	28	0.7	769	5.9
534	0	0.0	16	0.6	171	1.9
534.1	0	0.0	11	1.3	83	4.3
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	0	0.0	3	0.1	194	2.8
536	0	0.0	20	0.8	220	3.3
537.1	0	0.0	4	0.2	21	0.4
538	0	0.0	11	0.8	84	1.0
539	0	0.0	47	1.8	260	3.1
540	0	0.0	29	2.2	233	5.1
551	0	0.0	87	2.5	619	8.1
<b>Total</b>	<b>220</b>	<b>6.3</b>	<b>355</b>	<b>0.7</b>	<b>4,549</b>	<b>2.9</b>

Source: GIS query, USDA Forest Service, TNF

% of existing % to be harvested from the existing volume class acreage in each VCU

\* Includes areas which are not currently mapped with a volume class designation. These areas represent inclusions within or along the edges of harvest units that should be upgraded to VC 4 or higher based on ground verification. Table D-3

Table D-3

**Proposed Harvest of Volume Class by VCU for Alternative 3**

VCU	Volume Class 4		Volume Class 5		Volume Class 6	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	0	0.0	0	0.0	0	0.0
528	33	4.2	30	2.8	51	8.9
528.1	0	0.0	0	0.0	0	0.0
529	121	5.7	190	7.2	59	3.1
530	20	1.2	38	2.5	0	0.0
531.1	98	3.8	1	0.0	0	0.0
531.3	0	0.0	0	0.0	0	0.0
532	88	6.2	36	2.4	0	0.0
533	67	4.7	397	9.7	110	7.5
534	56	4.2	53	2.2	0	0.0
534.1	16	3.8	56	22.7	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	125	11.4	66	10.0	0	0.0
536	30	3.3	51	4.7	0	0.0
537.1	0	0.0	17	2.0	0	0.0
538	21	3.0	16	2.5	4	0.8
539	45	2.5	24	1.7	0	0.0
540	165	8.9	36	6.8	0	0.0
551	325	14.1	207	15.5	0	0.0
<b>Total</b>	<b>1,211</b>	<b>4.8</b>	<b>1,217</b>	<b>4.1</b>	<b>225</b>	<b>1.3</b>

VCU	Volume Class 7		Undesignated*		Total	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	0	0.0	0	0.0	0	0.0
528	0	0.0	3	0.3	116	0.0
528.1	0	0.0	0	0.0	0	0.0
529	59	4.0	23	0.7	452	0.0
530	0	0.0	1	0.0	59	0.0
531.1	0	0.0	2	0.0	101	0.0
531.3	0	0.0	0	0.0	0	0.0
532	0	0.0	25	0.5	149	0.0
533	69	16.9	28	0.7	671	0.0
534	0	0.0	10	0.3	120	0.0
534.1	0	0.0	11	1.3	83	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	0	0.0	3	0.1	194	0.0
536	0	0.0	19	0.8	100	0.0
537.1	0	0.0	4	0.2	21	0.0
538	0	0.0	10	0.7	51	0.0
539	0	0.0	8	0.3	77	0.0
540	0	0.0	25	1.9	227	0.0
551	0	0.0	87	2.5	619	0.0
<b>Total</b>	<b>129</b>	<b>3.7</b>	<b>258</b>	<b>0.5</b>	<b>3,040</b>	<b>1.9</b>

Source: GIS query, USDA Forest Service, TNF

% of existing% to be harvested from the existing volume class acreage in each VCU

\* Includes areas which are not currently mapped with a volume class designation. These areas represent inclusions within or along the edges of harvest units that should be upgraded to VC 4 or higher based on ground verification.

# Appendix D

Table D-4

## Proposed Harvest of Volume Class by VCU for Alternative 4

VCU	Volume Class 4		Volume Class 5		Volume Class 6	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	15	3.1	29	2.5	71	2.9
528	24	3.1	37	3.5	16	2.9
528.1	0	0.0	0	0.0	0	0.0
529	109	5.1	157	6.0	5	0.3
530	66	3.8	70	4.7	92	6.1
531.1	100	3.9	89	2.5	0	0.0
531.3	0	0.0	0	0.0	0	0.0
532	88	6.2	36	2.4	0	0.0
533	41	2.9	259	6.4	35	2.4
534	68	5.1	87	3.6	0	0.0
534.1	16	3.8	56	22.7	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	125	11.4	66	10.0	0	0.0
536	30	3.3	77	7.1	3	0.5
537.1	0	0.0	17	2.0	0	0.0
538	21	3.0	48	7.4	4	0.8
539	150	8.5	63	4.6	0	0.0
540	167	9.0	36	6.8	0	0.0
551	116	5.0	71	5.3	0	0.0
<b>Total</b>	<b>1,136</b>	<b>4.5</b>	<b>1,198</b>	<b>4.0</b>	<b>227</b>	<b>1.4</b>

VCU	Volume Class 7		Undesignated*		Total	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	7	2.9	1	1.4	123	0.0
528	0	0.0	3	0.3	81	0.0
528.1	0	0.0	0	0.0	0	0.0
529	57	3.9	21	0.6	349	0.0
530	33	12.1	8	0.2	269	0.0
531.1	0	0.0	9	0.2	198	0.0
531.3	0	0.0	0	0.0	0	0.0
532	0	0.0	25	0.5	149	0.0
533	0	0.0	21	0.6	356	0.0
534	0	0.0	16	0.6	171	0.0
534.1	0	0.0	11	1.3	83	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	0	0.0	3	0.1	194	0.0
536	0	0.0	19	0.8	129	0.0
537.1	0	0.0	4	0.2	21	0.0
538	0	0.0	11	0.8	84	0.0
539	0	0.0	47	1.8	260	0.0
540	0	0.0	29	2.2	233	0.0
551	0	0.0	31	0.9	218	0.0
<b>Total</b>	<b>97</b>	<b>2.8</b>	<b>261</b>	<b>0.5</b>	<b>2,919</b>	<b>1.9</b>

Source: GIS query, USDA Forest Service, TNF

% of existing% to be harvested from the existing volume class acreage in each VCU

\* Includes areas which are not currently mapped with a volume class designation. These areas represent inclusions within or along the edges of harvest units that should be upgraded to VC 4 or higher based on ground verification.



Table D-5

**Proposed Harvest of Volume Class by VCU for Alternative 5**

VCU	Volume Class 4		Volume Class 5		Volume Class 6	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	19	3.9	61	5.2	156	6.5
528	9	1.1	10	1.0	42	7.3
528.1	0	0.0	0	0.0	0	0.0
529	17	0.8	71	2.7	0	0.0
530	0	0.0	29	1.9	92	6.1
531.1	86	3.4	108	3.0	0	0.0
531.3	0	0.0	0	0.0	0	0.0
532	88	6.2	46	3.1	47	5.3
533	67	4.7	475	11.7	128	8.7
534	68	5.1	87	3.6	0	0.0
534.1	16	3.8	56	22.7	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	125	11.4	66	10.0	0	0.0
536	0	0.0	26	2.4	3	0.5
537.1	0	0.0	17	2.0	0	0.0
538	0	0.0	0	0.0	0	0.0
539	92	5.2	39	2.9	0	0.0
540	52	2.8	17	3.2	0	0.0
551	325	14.1	207	15.5	0	0.0
<b>Total</b>	<b>965</b>	<b>3.8</b>	<b>1,315</b>	<b>4.4</b>	<b>469</b>	<b>2.8</b>

VCU	Volume Class 7		Undesignated*		Total	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	7	2.9	2	2.2	245	0.0
528	0	0.0	0	0.0	61	0.0
528.1	0	0.0	0	0.0	0	0.0
529	0	0.0	4	0.1	92	0.0
530	0	0.0	3	0.1	124	0.0
531.1	0	0.0	8	0.2	203	0.0
531.3	0	0.0	0	0.0	0	0.0
532	13	2.1	40	0.8	234	0.0
533	69	16.9	28	0.7	769	0.0
534	0	0.0	16	0.6	171	0.0
534.1	0	0.0	11	1.3	83	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	0	0.0	3	0.1	194	0.0
536	0	0.0	0	0.0	30	0.0
537.1	0	0.0	4	0.2	21	0.0
538	0	0.0	0	0.0	0	0.0
539	0	0.0	40	1.5	171	0.0
540	0	0.0	22	1.7	91	0.0
551	0	0.0	87	2.5	619	0.0
<b>Total</b>	<b>89</b>	<b>2.5</b>	<b>270</b>	<b>0.5</b>	<b>3,106</b>	<b>2.0</b>

Source: GIS query, USDA Forest Service, TNF

% of existing % to be harvested from the existing volume class acreage in each VCU

\* Includes areas which are not currently mapped with a volume class designation. These areas represent inclusions within or along the edges of harvest units that should be upgraded to VC 4 or higher based on ground verification.

## Appendix D

Table D-6

### Proposed Harvest of Volume Class Acreage by VCU for Alternative 6

VCU	Volume Class 4		Volume Class 5		Volume Class 6	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	0	0.0	0	0.0	0	0.0
528	33	4.2	30	2.8	51	8.9
528.1	0	0.0	0	0.0	0	0.0
529	77	3.6	188	7.1	3	0.1
530	20	1.2	38	2.5	0	0.0
531.1	0	0.0	0	0.0	0	0.0
531.3	0	0.0	0	0.0	0	0.0
532	41	2.9	4	0.3	0	0.0
533	60	4.2	273	6.7	64	4.3
534	68	5.1	87	3.6	0	0.0
534.1	0	0.0	0	0.0	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	119	10.9	40	6.1	0	0.0
536	0	0.0	0	0.0	0	0.0
537.1	0	0.0	17	2.0	0	0.0
538	0	0.0	0	0.0	0	0.0
539	59	3.4	62	4.6	0	0.0
540	137	7.3	36	6.8	0	0.0
551	116	5.0	71	5.3	0	0.0
Total	730	2.9	847	2.8	118	0.7

VCU	Volume Class 7		Undesignated*		Total	
	Harvest	% Existing	Harvest	% Existing	Harvest	% Existing
527	0	0.0	0	0.0	0	0.0
528	0	0.0	3	0.3	116	2.7
528.1	0	0.0	0	0.0	0	0.0
529	0	0.0	19	0.6	286	1.9
530	0	0.0	1	0.0	59	0.6
531.1	0	0.0	0	0.0	0	0.0
531.3	0	0.0	0	0.0	0	0.0
532	0	0.0	14	0.3	60	0.4
533	12	2.9	25	0.6	435	3.3
534	0	0.0	16	0.6	171	1.9
534.1	0	0.0	0	0.0	0	0.0
534.2	0	0.0	0	0.0	0	0.0
534.3	0	0.0	0	0.0	0	0.0
534.4	0	0.0	0	0.0	0	0.0
535	0	0.0	3	0.1	163	2.4
536	0	0.0	0	0.0	0	0.0
537.1	0	0.0	4	0.2	21	0.4
538	0	0.0	0	0.0	0	0.0
539	0	0.0	37	1.4	159	1.9
540	0	0.0	24	1.8	197	4.3
551	0	0.0	31	0.9	218	2.8
Total	12	0.3	178	0.4	1,885	1.2

Source: GIS query, USDA Forest Service, TNF

% of existing % to be harvested from the existing volume class acreage in each VCU

\* Includes areas which are not currently mapped with a volume class designation. These areas represent inclusions within or along the edges of harvest units that should be upgraded to VC 4 or higher based on ground verification.

Table D-7 describes the spatial distribution of harvest types across the Project Area by VCU for Alternatives 2, 3, 4, and 5.

Table D-7

**Acres Harvested by Silvicultural System and Alternative**

VCU	A	B	C	D	E	F	G	H	I	Total
<b>Alternative 2 Silvicultural Harvest Types</b>										
527	0	85	0	70	8	0	0	20	62	245
528	4	65	12	47	0	14	0	0	12	153
529	82	182	0	204	28	20	9	0	0	526
530	25	92	11	136	0	17	0	2	0	283
531.1	6	87	93	88	0	27	0	0	155	455
532	21	0	0	85	0	128	0	0	0	234
533	48	253	0	315	14	0	0	0	138	769
534	5	74	0	92	0	0	0	0	0	171
534.1	35	48	0	0	0	0	0	0	0	83
535	9	6	0	179	0	0	0	0	0	194
536	0	35	0	83	0	0	40	0	61	220
537.1	21	0	0	0	0	0	0	0	0	21
538	0	21	0	33	0	0	31	0	0	84
539	27	41	64	45	83	0	0	0	0	260
540	33	115	0	33	51	0	0	0	0	233
551	101	122	0	269	17	0	89	0	21	619
<b>Total</b>	<b>417</b>	<b>1,225</b>	<b>179</b>	<b>1,680</b>	<b>202</b>	<b>205</b>	<b>169</b>	<b>23</b>	<b>449</b>	<b>4,549</b>

**Alternative 3 Silvicultural Harvest Types**

527	0	0	0	0	0	0	0	0	0	0
528	4	65	0	34	0	14	0	0	0	116
529	82	143	0	159	28	20	9	0	12	452
530	0	59	0	0	0	0	0	0	0	59
531.1	0	0	55	0	0	27	0	0	19	101
532	21	0	0	0	0	128	0	0	0	149
533	48	253	0	315	14	0	0	0	40	671
534	5	74	0	41	0	0	0	0	0	120
534.1	35	48	0	0	0	0	0	0	0	83
535	9	6	0	179	0	0	0	0	0	194
536	0	35	0	25	0	0	40	0	0	100
537.1	21	0	0	0	0	0	0	0	0	21
538	0	21	0	0	0	0	31	0	0	51

## Appendix D

Table D-7 (continued)

### Acres Harvested by Silvicultural System and Alternative

VCU	A	B	C	D	E	F	G	H	I	Total
<b>Alternative 3 Silvicultural Harvest Types (Continued)</b>										
539	0	13	64	0	0	0	0	0	0	77
540	33	115	0	27	51	0	0	0	0	227
551	101	122	0	269	17	0	89	0	21	619
<b>Total</b>	<b>359</b>	<b>953</b>	<b>119</b>	<b>1,048</b>	<b>111</b>	<b>188</b>	<b>169</b>	<b>0</b>	<b>92</b>	<b>3,040</b>

### Alternative 4 Silvicultural Harvest Types

527	0	0	0	61	0	0	0	0	62	123
528	0	42	12	13	0	14	0	0	0	81
529	82	169	0	69	0	20	9	0	0	349
530	25	78	11	136	0	17	0	2	0	269
531.1	0	56	55	41	0	27	0	0	19	198
532	21	0	0	0	0	128	0	0	0	149
533	16	104	0	153	14	0	0	0	70	356
534	5	74	0	92	0	0	0	0	0	171
534.1	35	48	0	0	0	0	0	0	0	83
535	9	6	0	179	0	0	0	0	0	194
536	0	35	0	55	0	0	40	0	0	129
537.1	21	0	0	0	0	0	0	0	0	21
538	0	21	0	33	0	0	31	0	0	84
539	27	41	64	45	83	0	0	0	0	260
540	33	115	0	33	51	0	0	0	0	233
551	0	0	218	0	0	0	0	0	0	218
<b>Total</b>	<b>274</b>	<b>787</b>	<b>360</b>	<b>911</b>	<b>148</b>	<b>205</b>	<b>80</b>	<b>2</b>	<b>151</b>	<b>2,919</b>

### Alternative 5 Silvicultural Harvest Types

527	0	85	0	70	8	0	0	20	62	245
528	4	23	0	34	0	0	0	0	0	61
529	0	13	0	41	28	0	9	0	0	92
530	25	0	0	97	14	0	0	2	138	276
531.1	6	31	93	47	0	27	0	0	0	203
532	21	0	0	85	0	128	0	0	0	234
533	48	253	0	315	0	0	0	0	0	617
534	5	74	0	92	0	0	0	0	0	171



Table D-7 (continued)

**Acres Harvested by Silvicultural System and Alternative**

VCU	A	B	C	D	E	F	G	H	I	Total
<b>Alternative 5 Silvicultural Harvest Types (Continued)</b>										
534.1	35	48	0	0	0	0	0	0	0	83
535	9	6	0	179	0	0	0	0	0	194
536	0	0	0	30	0	0	0	0	0	30
537.1	21	0	0	0	0	0	0	0	0	21
538	0	0	0	0	0	0	0	0	0	0
539	27	41	0	20	83	0	0	0	0	171
540	0	39	0	0	51	0	0	0	0	91
551	101	122	0	269	17	0	89	0	21	619
<b>Total</b>	<b>302</b>	<b>736</b>	<b>93</b>	<b>1,279</b>	<b>202</b>	<b>154</b>	<b>98</b>	<b>23</b>	<b>221</b>	<b>3,106</b>

**Alternative 6 Silvicultural Harvest Types**

527	0	0	0	0	0	0	0	0	0	0
528	4	65	0	34	0	14	0	0	0	116
529	40	126	0	50	28	20	9	0	12	286
530	0	59	0	0	0	0	0	0	0	59
531.1	0	0	0	0	0	0	0	0	0	0
532	0	0	0	0	0	60	0	0	0	60
533	48	179	0	153	14	0	0	0	40	435
534	5	74	0	92	0	0	0	0	0	171
534.1	0	0	0	0	0	0	0	0	0	0
535	9	6	0	148	0	0	0	0	0	163
536	0	0	0	0	0	0	0	0	0	0
537.1	21	0	0	0	0	0	0	0	0	21
538	0	0	0	0	0	0	0	0	0	0
539	0	13	64	0	83	0	0	0	0	159
540	33	85	0	27	51	0	0	0	0	197
551	0	0	218	0	0	0	0	0	0	218
<b>Total</b>	<b>160</b>	<b>607</b>	<b>282</b>	<b>503</b>	<b>177</b>	<b>94</b>	<b>9</b>	<b>0</b>	<b>53</b>	<b>1,885</b>



# **Appendix E**

## **Thorne Island Uneven-aged Management Plan**

# Abstract

Abstract of the 1998 Annual Meeting  
of the American Psychological Association



# Thorne Island Uneven-Aged Management Plan

An uneven-aged management plan was developed for timber harvest on Thorne Island for Alternative 4. This plan was prepared in response to issues and concerns identified during the public involvement process. The purpose of this plan is to minimize the impacts of timber harvest on the physical, biological, and social resources of the island, while providing for a sustained harvest volume, as allowed under the Land Use Designation of the current and proposed Tongass Land Management Plan (USDA Forest Service 1979 as amended, USDA Forest Service 1991a). It is the objective of the uneven-aged management plan to maintain a functional old growth ecosystem on Thorne Island for the benefit of natural resources and amenity values while contributing volume to the KPC Long-term Timber Sale Contract.

## Criteria for Selecting Uneven-Aged Management

Public comments on the Lab Bay Project indicated a high level of concern regarding harvest proposed for Thorne Island. Specifically, concern was noted for the potential effects of harvest and roading on: 1) wildlife and fisheries resources used by subsistence users; 2) visual and recreation resources used by residents of Whale Pass and surrounding areas; 3) visuals and recreation resources used by visitors to the area, including lodge guests, boaters, sport fishermen; and 4) old growth ecosystems, including species such as northern goshawks and wolves. In response to these concerns, alternatives to traditional clearcut harvesting were evaluated for the island.

The following criteria were identified to be necessary for an uneven-aged management plan, using helicopter harvesting methods, to be considered a viable alternative to conventional roaded harvesting.

1. Does the area have a logical geographical boundary separating it from nearby even-aged management areas?
2. Is the cost of infrastructure development for conventional roaded harvest high?
3. Is the average helicopter yarding distance for the geographical area under 0.75 miles?
4. Is the perceived public value of amenity uses high?

Thorne Island meets all of the above criteria, indicating that an uneven-aged harvest plan might be feasible from the economic standpoint. For these reasons, it was decided to develop a detailed uneven-aged harvest plan for the island, and to evaluate the effects of its implementation.

## Integrated Landscape Planning

The uneven-aged management plan for Thorne Island follows a landscape scale approach for creating an uneven-aged mosaic of patches in an existing unmanaged forest. The process consists of harvesting an equal area, in one or more cutting units, during each entry of the cutting cycle throughout the desired rotation (Davis 1987). The harvest identified in Alternative 4 would complete the first entry proposed for this plan.

## Existing Condition of Thorne Island

Thorne Island is roughly circular, 7,295 acres in size, and currently has no roads, log transfer facilities, or other improved developments present. GIS analysis shows that approximately 3,052 acres of the island is considered suitable for timber harvest, 26 acres of which have been previously harvested. For the uneven-aged management plan the suitable timber base is defined as described in the Silviculture, Timber & Vegetation section of Chapter 3 with the exception that lands within the 500 foot beach fringe buffer have also been identified as suitable for timber harvest if all other suitability criteria are met.

## Management Compartments

The suitable timber base was separated into three compartments (interior, beach fringe, and habitat conservation area (HCA)), each with a defined rotation length and timing of the first entry.

The interior compartment is the suitable lands that are not within the 500-foot beach fringe or the HCA. This area will be managed under a 150-year rotation with the first entry occurring this time period. A 150-year rotation is used for the interior compartment to allow time for mature stands to achieve old growth characteristics. The beach fringe compartment is the suitable lands within the 500-foot beach fringe that are not within the HCA. This area will be managed under a 195-year rotation with the first entry occurring this time period. The HCA compartment includes the interior and beach fringe suitable lands exclusively within the HCA boundary. This area will be managed under a 195-year rotation with the first harvest occurring during the second entry cycle. A 195-year rotation is used in the beach fringe and HCA compartments of the island in order to maintain a lower rate of harvest in sensitive areas. A 15-year re-entry interval was chosen so that precommercial thinning treatments on the more productive sites could be scheduled during the next entry. Commercial thinning stand treatments could also be conducted during entry periods to provide volume and wildlife habitat improvement.

Beach fringe is defined in the TLMP Draft Revision (1991a) as the land within 500 feet of mean high tide. Under the TLMP Draft Revision, these lands are considered unavailable for commercial timber harvest. Lands within the HCA would also be considered unavailable for harvest at this time per VPOP Committee recommendations. Under the proposed 195-year rotation length, the 2-acre patch cuts will be distributed at a density of approximately one per 26 acres of suitable forestland for each entry. Both the beach fringe and HCA areas are comprised of a mix of suitable forestland and unsuitable lands including forested and open muskeg. Because the habitats currently exhibit a mix of old growth with natural openings, forested muskeg and open muskeg habitats, and the openings created through harvest will be small and well-distributed, it is expected that the functions and values of the beach fringe and HCA habitats will be maintained over the 195-year rotation. For this reason, it was determined to be appropriate to include the suitable portions of these habitats in the available base for the uneven-aged management plan.

### Calculation of Harvest Level

The sustained harvest level proposed for Thorne Island is determined using the rotation defined for each of the compartments, a 15-year re-entry interval, and an equal number of acres harvested in each cutting cycle through the entire length of the rotation.

A grid system was used in GIS to divide the island into two-acre squares. This resulted in 1,526 squares distributed across the island on the suitable timber base. Each square located on the suitable timber base represents a potential cutting unit. The GIS analysis identified 918 squares in the interior compartment, 274 squares in the beach fringe compartment, and 334 squares in the HCA compartment.

The percentage of the suitable base that can be harvested each entry is defined by the rotation length and the re-entry interval. This is represented in the following formula.

$$\text{percent harvest} = \left( \frac{\text{re - entry interval}}{\text{rotation length}} \right) \times 100$$

The number of squares available for harvest during each re-entry period is identified by the following formula.

$$\text{number of points} = \left( \frac{\text{number of points in suitable base}}{\text{rotation length}} \right) \times \text{re - entry interval}$$

Using this formula, a maximum of 92 squares (184 acres) could be scheduled in the interior compartment, 21 squares (42 acres) could be scheduled in the beach fringe compartment, and 26 squares (52 acres) could be scheduled in the HCA suitable area of the island.



Approximately 95 percent of the suitable timber base is within one mile of the shoreline. The average yarding distance for the suitable timber was estimated to be 2/3 of a mile. Harvest of the interior most patches will occur at the same time as patches closer to the shoreline. This will maintain the average yarding distance of a sale offering less than 2/3 of a mile, thereby making the sale and harvest of interior patches economical. Each entry would harvest a proportionate amount of timber from both long and short yarding distances.

### Selection of Proposed Cutting Units

The next step in this process was to determine the individual squares that would be proposed for harvest. Since the uneven-age management plan should be continued to the end of the rotation, a systematic method was developed for choosing cutting units (squares) that could be repeated during the planning of each entry. A unique identification number was assigned to each square within the suitable timber base. The numbers begin at the furthest northwest square and sequentially proceed across the top row of squares then return to the west and restart on the next line down (the same order that is used when reading a page of text). A GIS AML program was developed to identify and select squares for harvest in the first entry. The program uses the identification number of each square that is within the suitable base, and the compartment (interior, beach fringe, or HCA) the square is located in. Loop counters were used to track the number of squares counted in each compartment as the program reviewed the squares moving east and south through the suitable timber base.

GIS databases were used to determine suitable and available lands for harvest on the island. With the exception of the inclusion of suitable lands within the beach fringe, current TLMP (1979a, as amended) and TLMP Draft Revision (1991a) criteria and standards and guidelines were used. Grid squares that fell within TTRA stream buffers, for example, were dropped from consideration. Under the conventional harvest plan, 19 units and over 15 miles of road are proposed for Thorne Island. Field inventory work for the conventional units and roads required ground survey of major portions of the island and included fisheries, wildlife, soils, water quality, timber inventory, visuals, recreation, and cultural resources. Due to this extensive field-verified database, it is anticipated that little additional falldown will occur during final layout for the selected grid squares. It should be noted that areas of high probability for cultural resources will require surveys.

### Current Entry

For the current entry the program began by selecting the first point in the suitable base of each compartment and every tenth point thereafter in the interior compartment (every thirteenth point in the beach fringe and HCA compartments). This selection spacing is based on the following formula.

$$\text{selection sequence} = \left( \frac{1}{\text{percent harvest} / 100} \right)$$

Which is equivalent to the following formula.

$$\text{selection sequence} = \left( \frac{\text{rotation length}}{\text{re-entry interval}} \right)$$

The actual pattern of harvest on the landscape of Thorne Island for each entry will not appear as a systematic grid due to the presence of non-suitable land intermingled throughout the suitable timber base. The unit design map (Appendix F) shows the location of proposed cutting units on Thorne Island for the first entry. In the interior compartment, one square has been previously harvested and is deferred from the current entry. In the beach fringe compartment, three squares have been dropped from the current entry due to their proximity to cultural resource sites. The squares identified within the HCA for the first entry have been deferred from harvest while management guidelines are being finalized. This will ensure that future options are available in the near term for habitat conservation planning, while also providing the option of beginning the uneven-aged management plan in this area during the second entry.

For purposes of analysis, the entire island is referred to as Unit 551-999 under the uneven-aged harvest plan, avoiding the need for 218 individual unit cards and numbers. However, each 2-acre cutting unit will be individually identified and verified for suitability of harvest using field inventory and GIS data. Proportionality is calculated based on the Volume Class acres for each of the identified 2-acre cutting units.

### Future Entries

In order to minimize the selection of squares immediately adjacent to one another on subsequent entries, the selection of the starting square should be staggered with each entry. For example, if the selection sequence is every tenth square, the second entry can choose the fifth square for a starting point, and the third entry the third or the eighth square. Subsequent entries can follow this same pattern.

### Harvest Type

The cutting unit squares are defined as two acres in size and will be harvested using a clearcut with reserve tree prescription. Actual size and shape of the cutting units will vary due to timber felling, yarding, and site constraints, but will average 2 acres across the island. Non-merchantable timber will be felled only where necessary to comply with logging safety standards. Two trees per acre (or four trees total) greater than 15 inches dbh, will be retained within the interior of the square. This will provide stand structure in the future for wildlife. Retention trees can be selected by loggers choice and may contain defect or deformities, but should have little or no mistletoe infection. Cedar and spruce trees should be retained whenever practical to maintain and promote species diversity. These patch cuts would mimic naturally occurring openings in old-growth forest and be visually unobtrusive.

### Economics

The estimated costs of implementing an uneven-aged harvesting strategy for Thorne Island are shown in Table E-1. This table provides a comparison of the costs associated with conducting a conventional roaded harvest plan versus an uneven-aged management plan. Costs are separated for the initial entry and subsequent entries, using constant dollars for future costs. These costs are estimated for entries occurring over a 150-year period, which would result in the harvesting of approximately 40 million board feet. An estimate of the revenues associated with each management plan using constant dollars would show that the two plans provide equal revenue. This is due to the fact that the same volume would be harvested under both plans and the same revenue is applied per volume harvested.

The comparison of the two plans shows that conventional harvest would result in higher cost during the first entry due to infrastructure development, and lower costs during each subsequent entry. Conventional harvesting requires the continued maintenance of the infrastructure during each re-entry period. Over a 150-year period the entire suitable timber base would be harvested using conventional harvest, while under the uneven-aged management plan portions of the HCA and beach fringe would not have been harvested yet. The beach fringe is considered suitable for harvest under the uneven-aged management plan and therefore this plan has a larger total timber base (an additional 634 acres) harvested over the length of the rotation.

While the total cost of the conventional roaded harvest on Thorne Island is 27 percent lower (\$4.0 million) than the uneven-aged management plan, other monetary and non-monetary benefits would result from the uneven-aged harvest strategy. Benefits that would be available from the selection of an uneven-aged harvest strategy include the following.

1. Minimal permanent disturbance of the physical resources.
2. Maintenance of existing visual quality.
3. Maintenance of old-growth characteristics.
4. Maintenance of existing subsistence values.
5. Maintenance of existing recreation uses and future recreation opportunities.



Table E-1

**Thorne Island Cost Comparison****Conventional Harvest****Uneven-Age Mgt. Plan****First Entry**

## Quantities

Proposed Harvest (acres)	619	218
Proposed Harvest Volume (mbf)	8,154	3,563
Proposed Road Construction (miles)	15.5	0
Number of LTF's	1	0

## Cost per Unit

Harvest Type C (Running Skyline vs. Heli, \$/mbf)	\$134.10	\$380.00
Hauling (\$/mbf)	\$13.33	\$0.00
Road Construction (\$/mile)	\$155,280	\$0
Log Transfer Facility (\$/LTF)	\$100,000	\$0

## Total Costs

Harvest	\$1,093,451	\$1,353,940
Hauling	\$108,693	\$0
Roads	\$2,406,840	\$0
LTF	\$100,000	\$0
Total	\$3,708,984	\$1,353,940

## Total Costs/MBF

\$455	\$380
-------	-------

**Subsequent Entries**

## 4 additional entries

## 9 additional entries

## Quantities

## over a 135 year period

## over a 135 year period

Total Proposed Harvest (acres)	1,773	1,962
Total Proposed Harvest Volume (mbf)	28,368	32,067
Total Proposed Road Construction (miles)	9	0
Proposed Road Reconstruction (miles/entry)	11	0
Number of LTF's	0	0

## Cost per Unit (in constant dollars)

Harvest Type C (Running Skyline vs. Heli, \$/mbf)	\$134.10	\$380.00
Hauling (\$/mbf)	\$13.33	\$0.00
Road Construction (\$/mile)	\$155,280	\$0
LTF Construction (\$/LTF)	\$100,000	\$0
Road Reconstruction (\$/mile)	\$20,000	\$0
LTF Maintenance (\$/entry)	\$25,000	\$0

## Total Costs

Harvesting	\$3,804,149	\$12,185,460
Hauling	\$378,145	\$0
Road Construction	\$1,397,520	\$0
LTF Construction	\$0	\$0
Road Reconstruction	\$880,000	\$0
LTF Maintenance	\$100,000	\$0
Total	\$6,559,814	\$12,185,460

**Total Costs over a 150 Year Rotation (in constant dollars)**

<b>Total Cost</b>	<b>\$10,268,798</b>	<b>\$13,539,400</b>
<b>Cost per Thousand Board Feet</b>	<b>\$281.17</b>	<b>\$380.00</b>

### Conclusion

Thorne Island is ideally suited for an uneven-aged management strategy using helicopter harvesting due to its circular shape, an average yarding distance of less than 0.75 miles and a maximum yarding distance of 1.5 miles from the center of the island to an offshore barge, the high cost of establishing roads and a log transfer facility, and the public concerns surrounding conventional timber harvest. The uneven-aged plan developed for the island will allow harvest of a sustained level of 3,922 MBF per 15-year entry over a 150-year period.

Through the use of small, well-distributed, helicopter-yarded patch cuts, it is expected that natural resource and amenity values will be maintained over the 150 to 195-year rotation.

# **Appendix F**

## **Unit Design Cards**





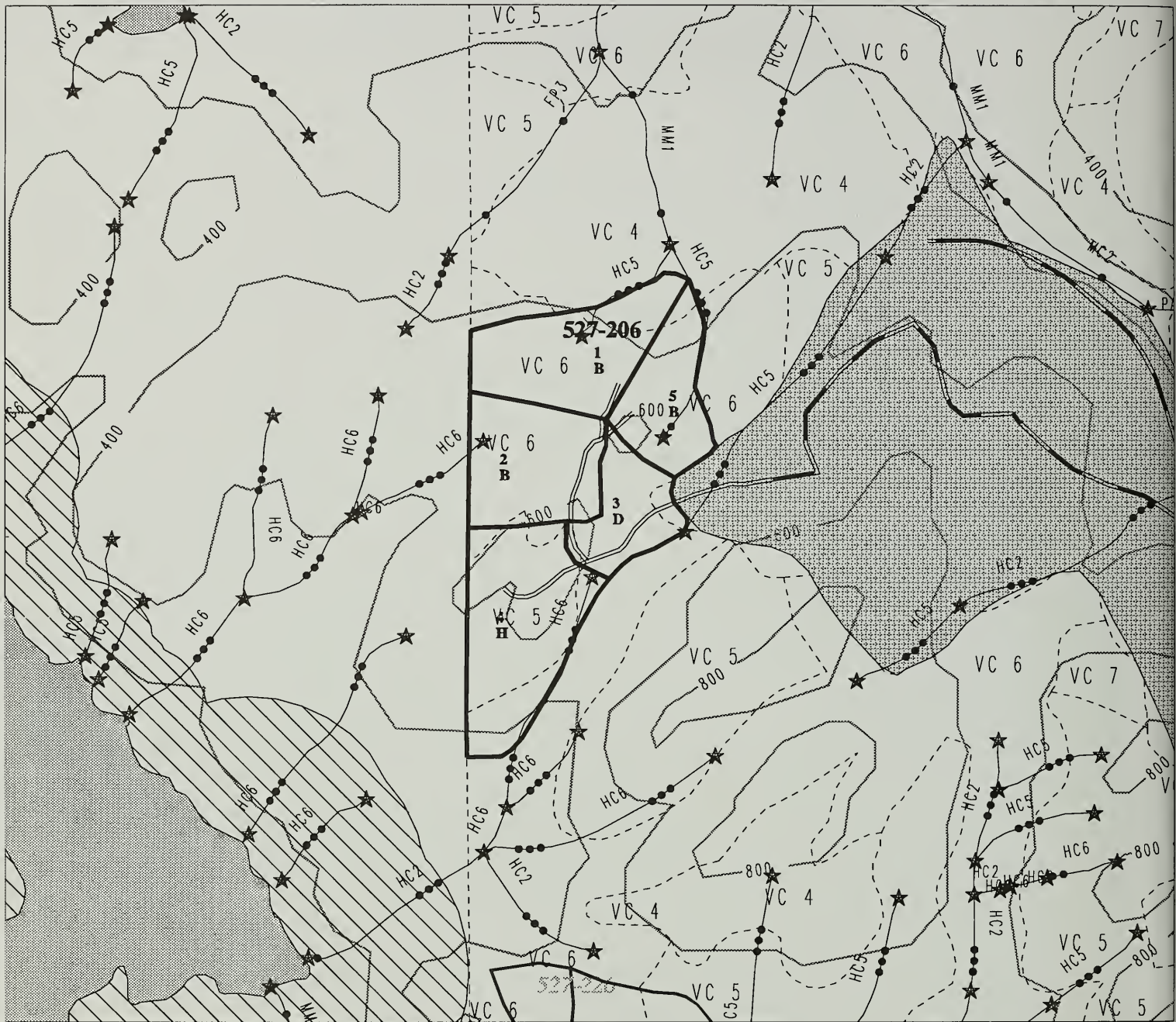
## **Appendix F Notes**

The Lab Bay Draft EIS, Volume 2, Appendix F, contains unit cards for all units in the pool. The Final EIS, Volume 2, Appendix F contains only those unit cards that have been substantially revised subsequent to the printing of the Draft EIS.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 527-206

Acres: 69.7



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 527-206                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 527-206

Harvest Volume : 24.3 MBF/acre

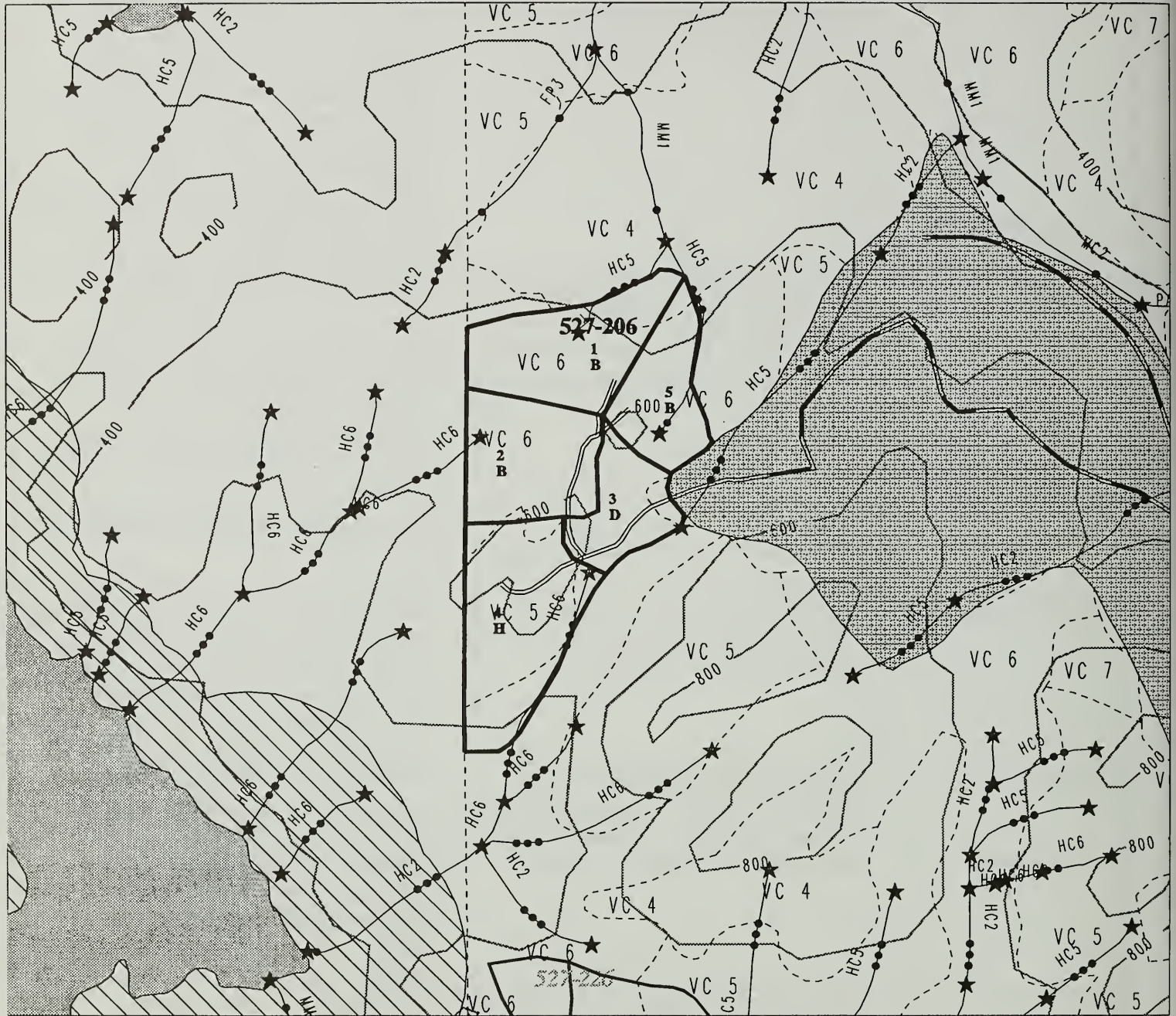
Acres : 69.7

Resource Area	Concerns	Resolution
Silviculture	Possible windthrow along west boundary of clearcut. Mistletoe in unit.	Retain trees (mistletoe-free) of all size classes along a 100' strip adjacent to property line. Site-specific retention areas within the unit were identified by field personnel. These, in conjunction with the Harvest Types (Type B in 3 settings, Type D in one setting, and Type H in one setting), would be used to meet the specified Concern Level. Plan on precommercial thin in approx. 20 years.
Fisheries	Segment of reconstructed road spur off of road 2086 crosses Class III in close proximity to Class I. Harvest within HGC RMA will exceed threshold of 25 percent.	Apply timing restriction, BMP 12.7, 14.6, 14.16, 14.17. Retain timber with HGC stream RMA to avoid exceedance of HGC harvest threshold. Selectively harvest windthrow prone trees as necessary to provide windfirm retention zone and protect slope stability and water quality.
Soils	Minimize risk of erosion and sedimentation due to domestic supply watershed.	Achieve partial suspension throughout unit. BMP 13.9
Water Quality/Quantity	Stream along southeast boundary is deeply incised (not flagged). Watershed for Port Protection community.	Put unit boundary on topographic break and directionally fall away. Achieve partial suspension and mark southeast unit boundary along topographic break. 50-100' from stream. BMP 12.7, 12.11, 13.2, 13.3, 13.9, 13.12, 13.6, 14.8, 14.10.
Wildlife	Heavily fragmented forest; loss of structural diversity. High quality wildlife habitat. Unconfirmed goshawk siting. Within Project-defined small COGA.	Maintain Level 2 structure through the retention of 50'-100' selective harvest buffer around unit boundary and 1-2 acre leave tree islands within swing yard setting- central-east portion of unit. Leave mistletoe-free trees in island. Survey unit for goshawks prior to final layout. Close road after harvest.
Karst	Based on Phase 1 and 2 studies, this unit is located on high vulnerability karst due to contribution to domestic water supply. No sinkholes or caves observed during 1992 field work, but several solution channels; presumed connection to domestic water supply. If this unit is harvested, interim standards and guidelines may not be met.	Recommend dye tracer study to determine connection, or lack thereof to domestic water supply. Geotechnical investigation required to evaluate relocation of Road 64-76-08.1A out of solution channel, and whether blasting along existing and proposed roads adjacent to unit will adversely affect water supply with sedimentation. Ketchikan Area karst resource specialist should review unit during final layout. BMP 14.9

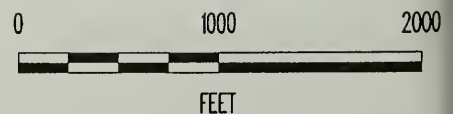
# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 527-206

Acres: 69.7



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 527-206                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

**Unit #: 527-206 (Continued)**

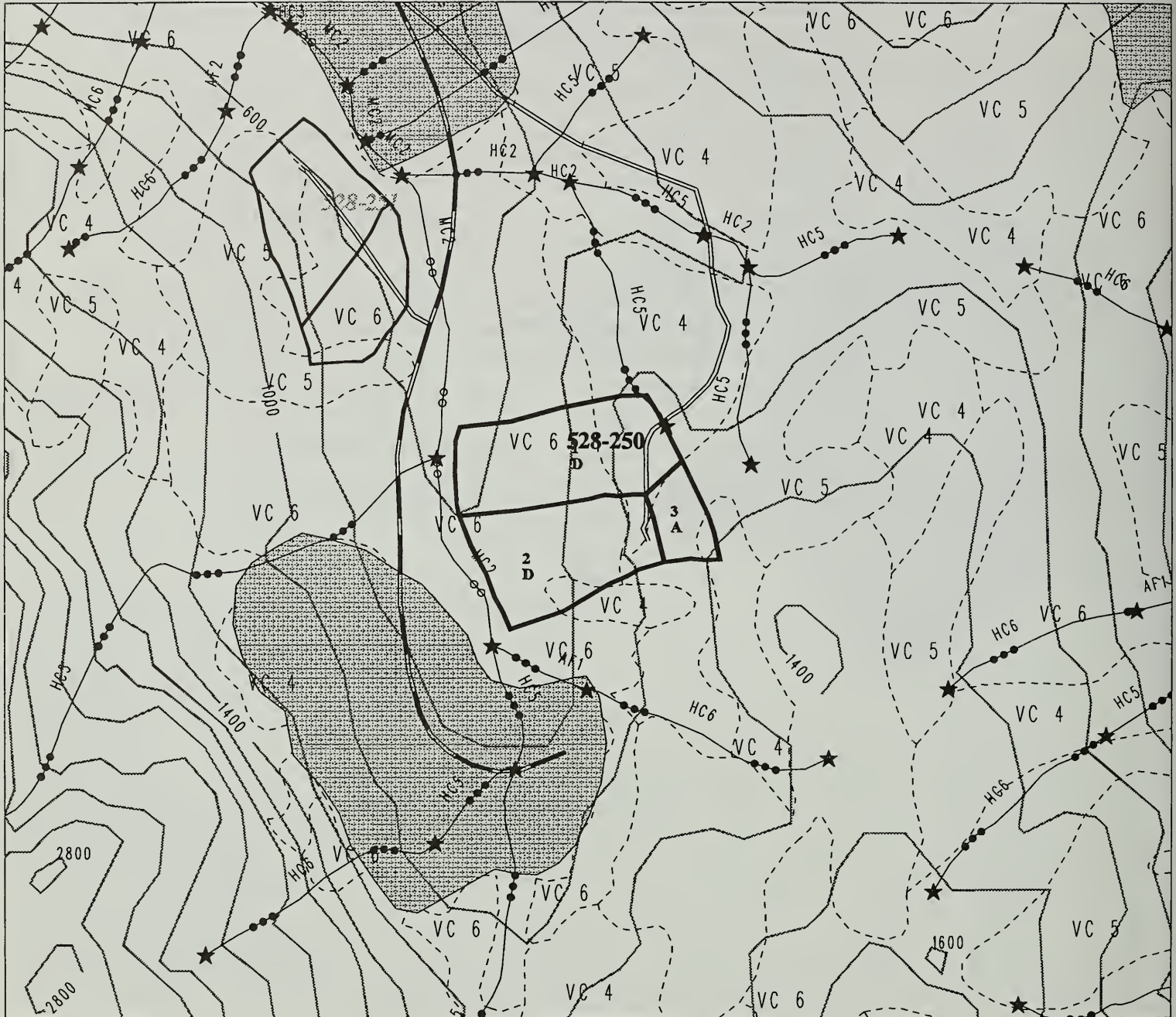
Visuals/Recreation	Visible from Port Protection and Cruiseship Route in middleground. Scenic Viewshed LUD. Adopted Partial Retention VQO.	Meets VQO.
Cultural	Reported culturally modified tree in South tip of unit.	This tip has been dropped.
Lands	Property line along West boundary. southeast winds may cause blowdown on private land.	Survey prior to final layout. Individual tree mark within 100' of West boundary to retain windfirm trees.
Transportation	Road 64-76-08.1A goes through solution channel for 700 feet.	Close roads following harvest.
Unit Layout/ Administration	Tail trees in private land would be helpful. Location of stream channel and property line dictates south tip location. Achieve partial suspension.	Need to get agreement from private landowners. Private land location survey. Use running skyline. Directionally fell trees away from private land boundary. Retain all trees that fall across boundary.
Opportunities		

BMP's 12.7, 12.11, 13.2, 13.3, 13.9, 13.12, 13.16, 14.6, 14.8, 14.9, 14.10, 14.16, 14.17

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 528-250

Acres: 38.0



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 528-250                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 528-250

Harvest Volume : 18.1 MBF/acre

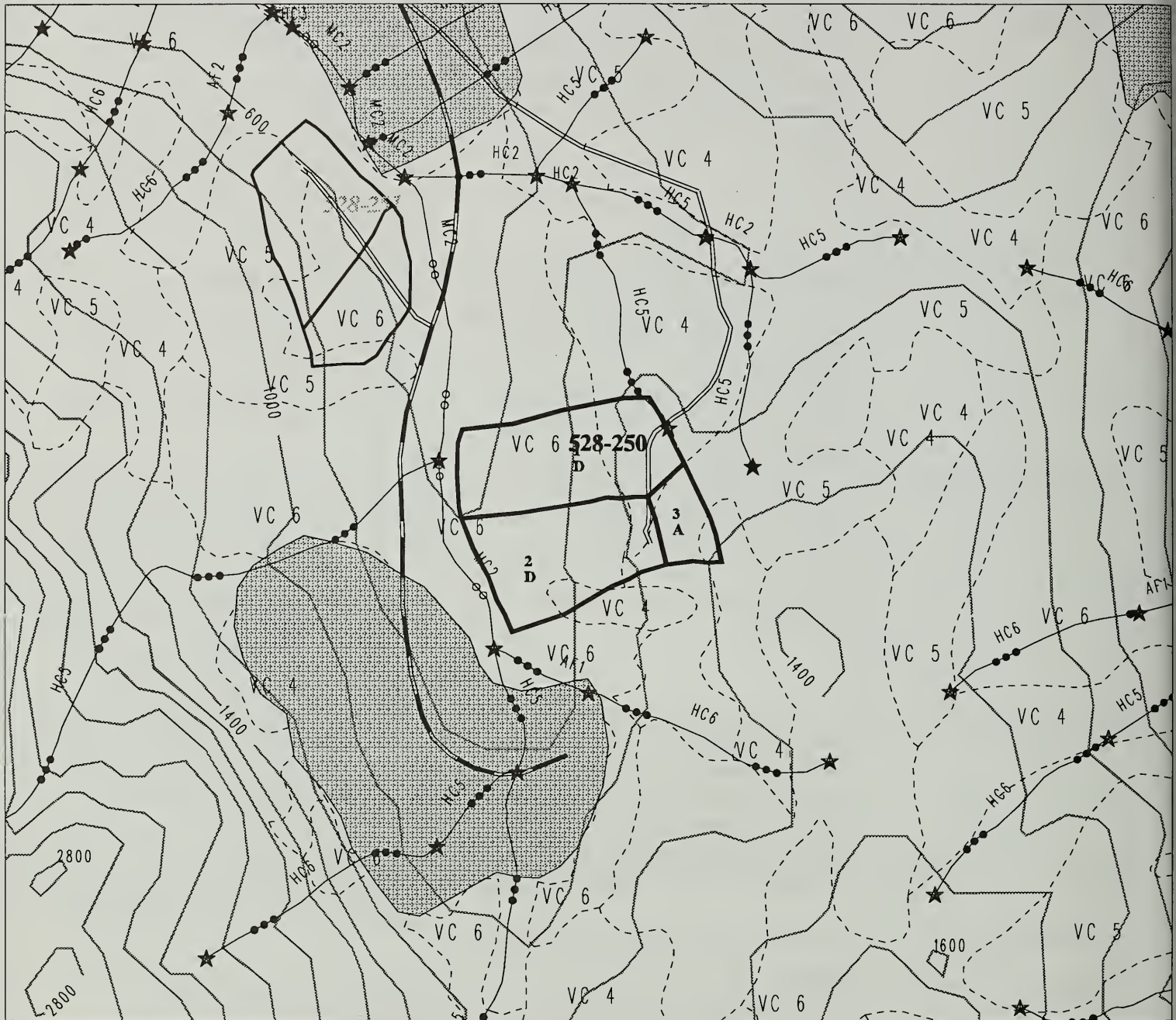
Acres : 38.0

Resource Area	Concerns	Resolution
Silviculture	Overstocking. Red alder stocking. Windthrow potential. Saturated and rocky soils. Slope stability. Slide areas present within and adjacent to timber stand.	Harvest Type D with retention area (setting 1); Type D with retention areas (setting 2); Type A harvest for setting 3. PCT and alder control within 20 yrs. Avoid soil disturbance with partial suspension. Site specific retention areas within the unit were identified by field personnel to meet the specified Concern Level.
Fisheries	Class II stream along west edge (flows into a Class III). Need trees along bank for root structure, shading, and large woody debris.	Retain min 100' buffer from streambank - emphasize retention of windfirm trees in buffer - remove trees >20" dbh within buffer. BMP 12.7
Soils	Strip of small, dense trees in central portion of unit is old slide area. High MMI soils where slopes >60%.	Retain these trees and yard away from this area. BMP 13.5, 13.9
Water Quality/Quantity	Class III stream along south boundary flows through healed debris slide. 3 other Class III streams on west side - not deeply incised. Class III stream in northeast portion of unit - more incised downstream.	Locate south unit boundary just north of Class III stream flowing along southwest boundary. (CT6.51) Remove logging-related debris. Locate boundary on west side of stream flowing along northeast boundary. Special measures to prevent sediment from entering stream are necessary during road construction. BMP 13.16, 14.9, 14.6, 14.10
Wildlife	Two small meadows located along northeast corner and middle of east boundary. Meets parameters for high quality goshawk habitat. Located within a Project-defined medium COGA.	Level 1 structure by retaining stands within 70' of meadow and maintaining 4 leave tree inclusions w/in unit as mapped. Unit surveyed for goshawks in 1995; no detections.
Karst	No significant karst features observed.	Personnel conducting final unit layout should be trained in karst identification.
Visuals/Recreation	Adjacent to Mt. Calder - very visible to hikers.	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires construction of Rd #65-76-12 to STA 20+00 and Rd #65-76-12.1 to STA 29+34. 100' of full bench and muskeg crossings on Rd #65-76-12, Rd 65-76-12.1 and Rd #65-76-12.1.	Close road upon completion of harvest.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 528-250

Acres: 38.0



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 528-250                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 528-250 (Continued)

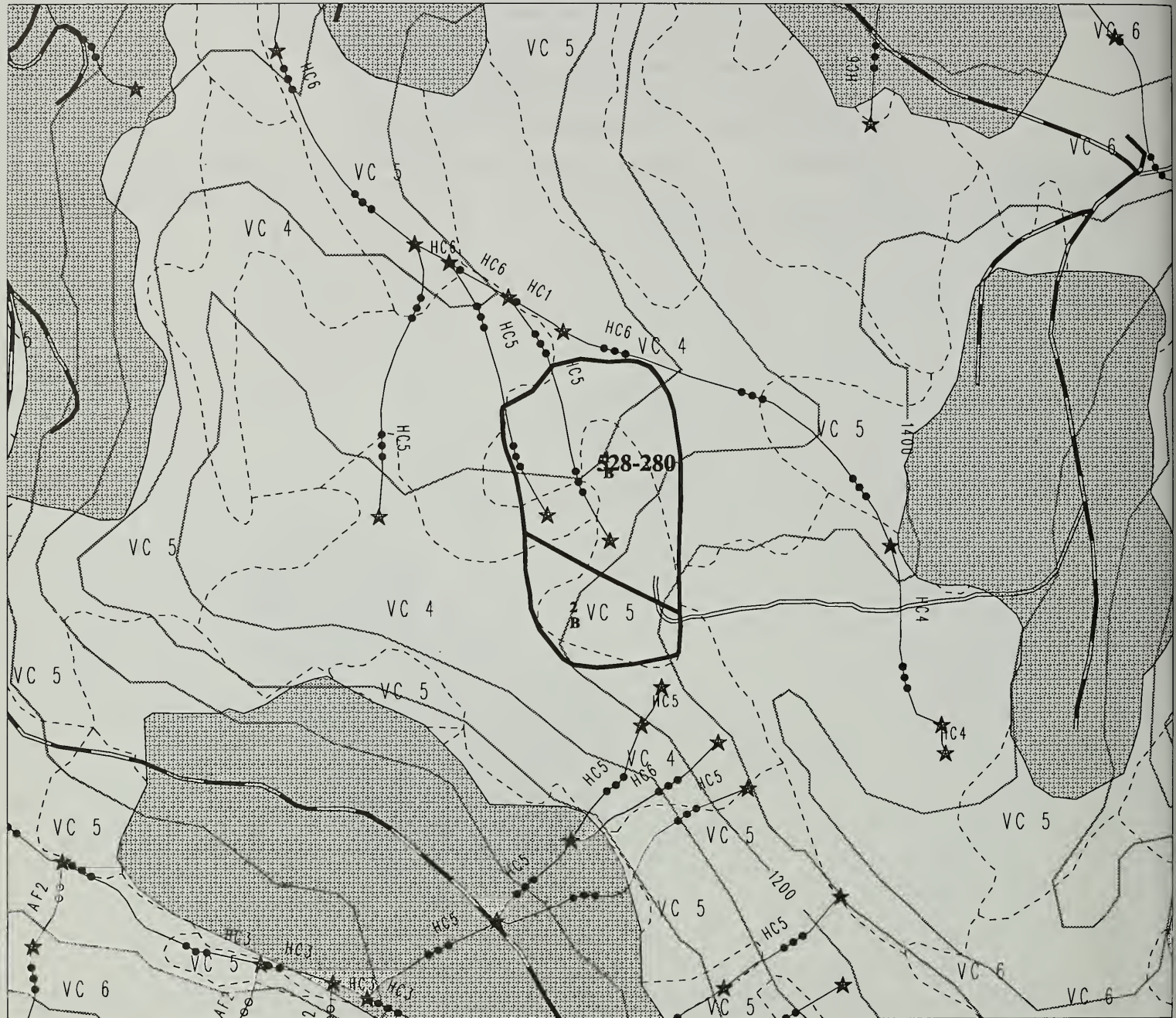
Unit Layout/ Administration	Split yard around old slide area. Guyline anchors for landing 23+50 marginal to east. Use artificial anchors. requires large slackline (3 drum) yarder using live skyline system. Tailholds across Class II stream with min. 100' buffer on west unit boundary.	
Opportunities		

BMP's 12.7, 13.5, 13.9, 13.16, 14.6, 14.9, 14.10

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 528-280

Acres: 41.9



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 528-280                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-10

June 27, 1996



# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

Unit #: 528-280

Harvest Volume : 19.9 MBF/acre

Acres : 41.9

Resource Area	Concerns	Resolution
Silviculture	Regeneration along NW and NE unit boundaries. Maintaining cedar component in northern 1/2 of unit. Probable red alder and salmonberry incursion due to soil disturbance. Windthrow potential.	Partial suspension requested throughout unit. Regeneration Harvest Type B. Select yellowcedar for retention in north portion.
Fisheries	One Class III stream along north unit boundary. Two small Class III bisecting unit. No fisheries concerns.	
Soils	High MMI soils where slopes exceed 60% (southwestern portion of unit). Two small Class III streams do not require special protection.	Partial suspension required where slopes exceed 60%. Try to achieve full suspension across stream in north part of unit. BMP 13.5, 13.9, 13.16
Water Quality/Quantity	One Class III stream on north boundary has large slide on bank opposite of unit.	Put north unit boundary on topographic above stream to retain vegetation within inner gorge. BMP 12.7, 13.2, 14.10, 14.13
Wildlife	Reduction of diverse forest structure especially large diameter hemlock in central portion of unit.	Level 1 structure retention through harvest prescription.
Karst	Unit not karsted. First 1,000 feet of access road crosses high vulnerability karst area.	Road through karst was located to minimize distance on limestone geology, avoid significant karst features, and provide mitigation to prevent channeling of road drainage into karst features.
Visuals/Recreation	No special concern.	
Cultural	No cultural resources identified.	Report cultural findings to Forest archaeologist.
Lands	No concerns.	
Transportation	70% of spur Road 65-76-07 travels through extensive forested muskeg. Road in unit near top of recent slide.	Need to assess depth to bedrock. Recommend extending road 300 ft north to access alternative landing site. Keep road on ridge at top of unit. Close road upon completion of harvest.
Unit Layout/ Administration	Live skyline yarder with haulback desirable along east boundary. Rest of unit shotgun. Entire unit uphill yarding. In northwest corner, multiple tailholds required.	Locate landings to yard around slide area.
Opportunities		

BMP's 12.7, 13.2, 13.5, 13.9, 13.16, 14.10, 14.13.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 529-202

Acres: 88.4



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 529-202                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 529-202

Harvest Volume : 25.1 MBF/acre

Acres : 88.4

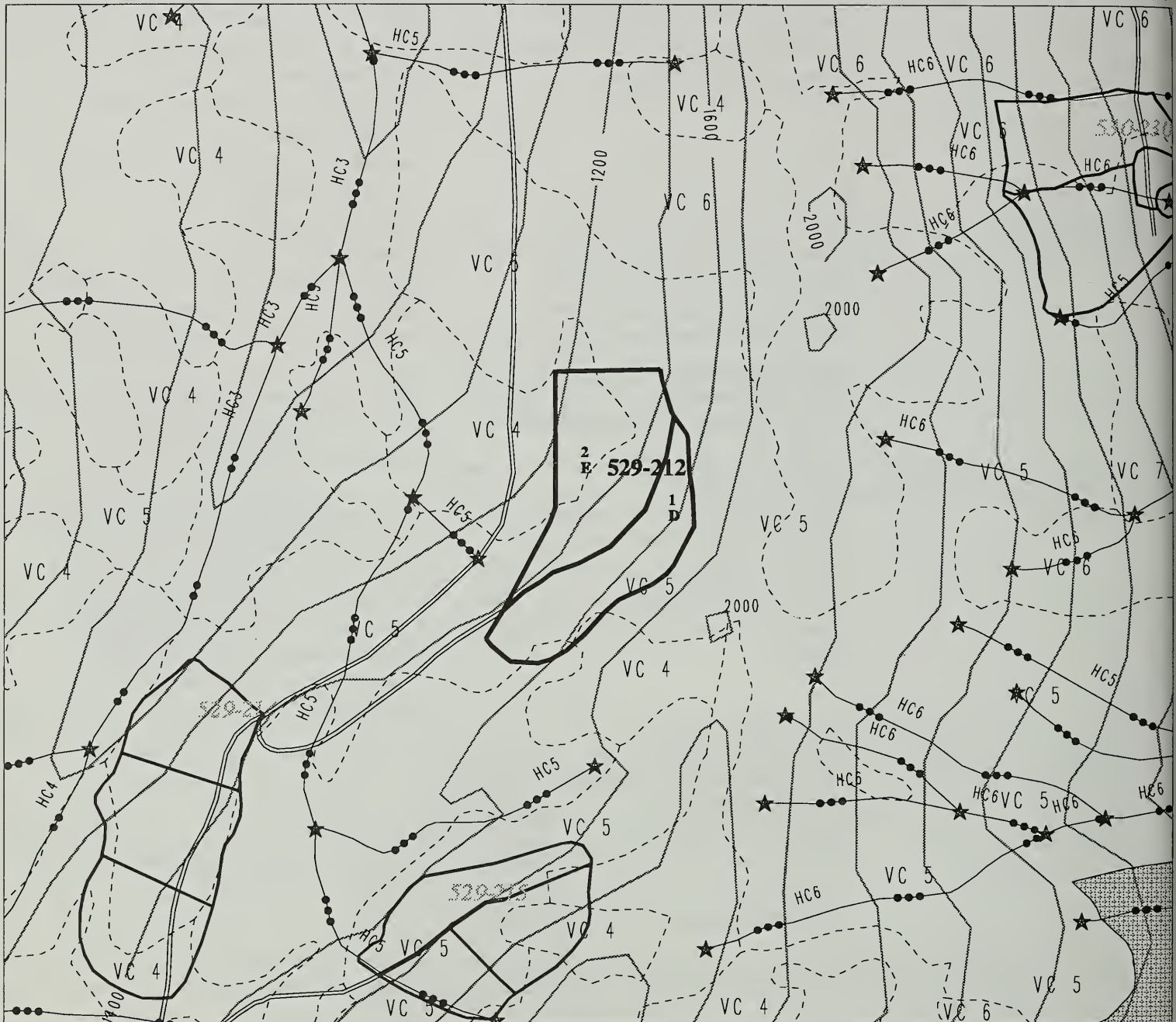
Resource Area	Concerns	Resolution
Silviculture	Mistletoe on east end of unit. Overstocking may occur. Riparian soils along east unit boundary.	5 of 6 settings are Regeneration Harvest Type B; center setting is Harvest Type D with retention area. Clearcut mistletoe infestations. Explore opportunities to conduct sanitation cut to remove heavily infested mistletoe trees on riparian soils along east boundary. PCT at 20 years following harvest.
Fisheries	Two Class I streams were identified proximal to unit on west and east boundaries. One Class III stream identified in southwest portion of unit, but no special concern.	Maintain a minimum of 100-foot buffer on both streams. The west boundary stream is actually beyond 100 feet due to muskeg and associated poor timber.
Soils	Riparian soils associated with Class I stream along east unit boundary.	Move east unit boundary to approx. 350' from stream to prevent harvest on riparian soils. BMP 12.6, 13.2
Water Quality/Quantity	No special concerns.	
Wildlife	Loss of forest structure in basin area. Concern for increased access and resulting disturbance. Unit is within Trumpeter swan winter habitat. Meets parameters for high quality goshawk habitat.	Maintain minimum of Level 1 structure by maintaining forest within at least 100 feet of two Class I streams and 3 acre leave tree island within central portion of unit. Implement 1/2 mile disturbance buffer if swans are present. Unit surveyed for goshawks in 1995; no detections.
Karst	No special concern.	
Visuals/Recreation	No special visual or recreation concern.	
Cultural	No special concern.	
Lands	No special concern.	
Transportation	Road Number 64-76-14. No special concern.	Close road upon completion of harvest.
Unit Layout/ Administration	Unit designed for swing yarder, running skyline.	
Opportunities	Low elevation winter harvest units.	

BMP's 12.6, 13.2.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 529-212

Acres: 32.4



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 529-212                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |

F-14





# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 529-212

Harvest Volume : 23.7 MBF/acre

Acres : 32.4

Resource Area	Concerns	Resolution
Silviculture	Unit contains many small muskegs. Upper portion of unit is generally more productive. Clearcutting would likely reduce the presence of yellowcedar in future stand.	Harvest Type D in upper setting. Type E harvest in middle elevations below upper road; select yellowcedar for retention. PCT in 20 years, selecting yellowcedar and Sitka spruce for retention.
Fisheries	Class III stream along west boundary flows into Class II stream below unit. Class I stream crossing on Road 65-77-10 accessing unit.	Logical west unit boundary on topographic break above stream (blind lead). BMP 12.7, 12.11, 14.6, 14.10, 14.16, 14.17.
Soils	High MMI soils on steeper slopes upslope of road location.	Achieve at least partial suspension where downhill yarding to road. BMP 13.5, 13.9
Water Quality/Quantity	Class III stream along west boundary influences water quality downstream - steep upper banks.	Logical West unit boundary on topographic break above stream (blind lead). BMP 12.7
Wildlife	Entry into previously undisturbed area - loss of forest structure. Increase road density in a previously unroaded area. Partially within a Project-defined wildlife corridor.	Level 1 structure retained through maintenance of cull and unmerchantable trees along unit boundary. Retain trees in blind lead area along west boundary, adjacent to stream. Close Road 65-77-10 between units 531.1-230 and 529-212.
Karst	Not karsted.	
Visuals/Recreation	Future opportunities of primitive and semi-primitive recreation lost or disturbed. High quality visual resources impacted. Meets adopted Maximum Modification VQO as designed.	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Crosses Class III (V-notch in S-tip). Road network tie to Calder Creek Road is unfeasible. One Class I crossing (see Fisheries). Road Number 65-77-10	Allow for debris passage; pull culvert after harvest complete. Proposed road network tie to existing road needs to be field verified north from this unit. Close road upon completion of harvest. Potential alternate route to access this unit has been identified and is described on the road card.
Unit Layout/Administration	Designed for swing yarder with running skyline system. Run additional profiles to verify partial suspension.	
Opportunities	Primitive recreation opportunities. Trail access.	

BMP's 12.7, 12.11, 13.5, 13.9, 14.6, 14.10, 14.16, 14.17



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 529-259

Acres: 16.6



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 529-259                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-16

June 27, 1996

# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 529-259

Harvest Volume : 22.9 MBF/acre

Acres : 16.6

Resource Area	Concerns	Resolution
Silviculture	Brush competition. Salmonberry incursions.	Regeneration Harvest Type B. Monitor for planting and brush control. PCT within 20 years.
Fisheries	Two Class I streams identified along north and east sides of unit. Alder Creek is a major anadromous stream for all fish species (excluding sockeye) on island.	100' buffer required on both streams. 200' buffer required on the eastern half of the north unit boundary along Alder Creek to protect channel type.
Soils	High MMI soils on slopes bordering Alder Creek.	100' buffer on Class I stream protects high MMI area. BMP 13.5
Water Quality/Quantity	Risks of surface erosion and sediment to fish-bearing stream. Tributary 1 considered temperature sensitive due to low gradient and muskeg drainage.	100' minimum buffer along all stream channels adjacent to unit. BMP's 12.6, 13.3, 14.5, 14.10
Wildlife	Fragmentation of forested/muskeg corridor between Alder Creek and Road 20. Harvest of this unit, in combination with 529-257 and 529-285, would isolate effective forest corridor. Unit is within Trumpeter swan winter habitat.	Recommend deferring future harvest entry after adjacent units are adequately established. Recommend surveying for eagle nest prior to layout. Level 2 structure retention through maintenance of stream buffers. Implement 1/2 mile disturbance buffer if swans are present.
Karst	Not karsted.	
Visuals/Recreation	Very visible from Road 20. Adopted Maximum Modification VQO.	Meets VQO.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Road Number 64-76-11. Spur associated with 20 Road.	Close road upon completion of harvest.
Unit Layout/ Administration	Need to verify that this unit is at least 500 feet west of 529-257 after the latter boundary is adjusted. If this unit is harvested during another future entry, boundaries could be adjusted to facilitate a more cost efficient logging system. Possible to extend unit toward Road 20 dependent upon visual considerations. Recommend deferring unit to future entry. Unit designed for high lead logging from one landing in central portion of unit.	Unit flagged with only 100' buffer in this area. Reflag with 200' buffer on east half of north unit boundary to protect stream and meet required standards and guidelines for stream class and channel type.
Opportunities	Opportunity for angling access.	

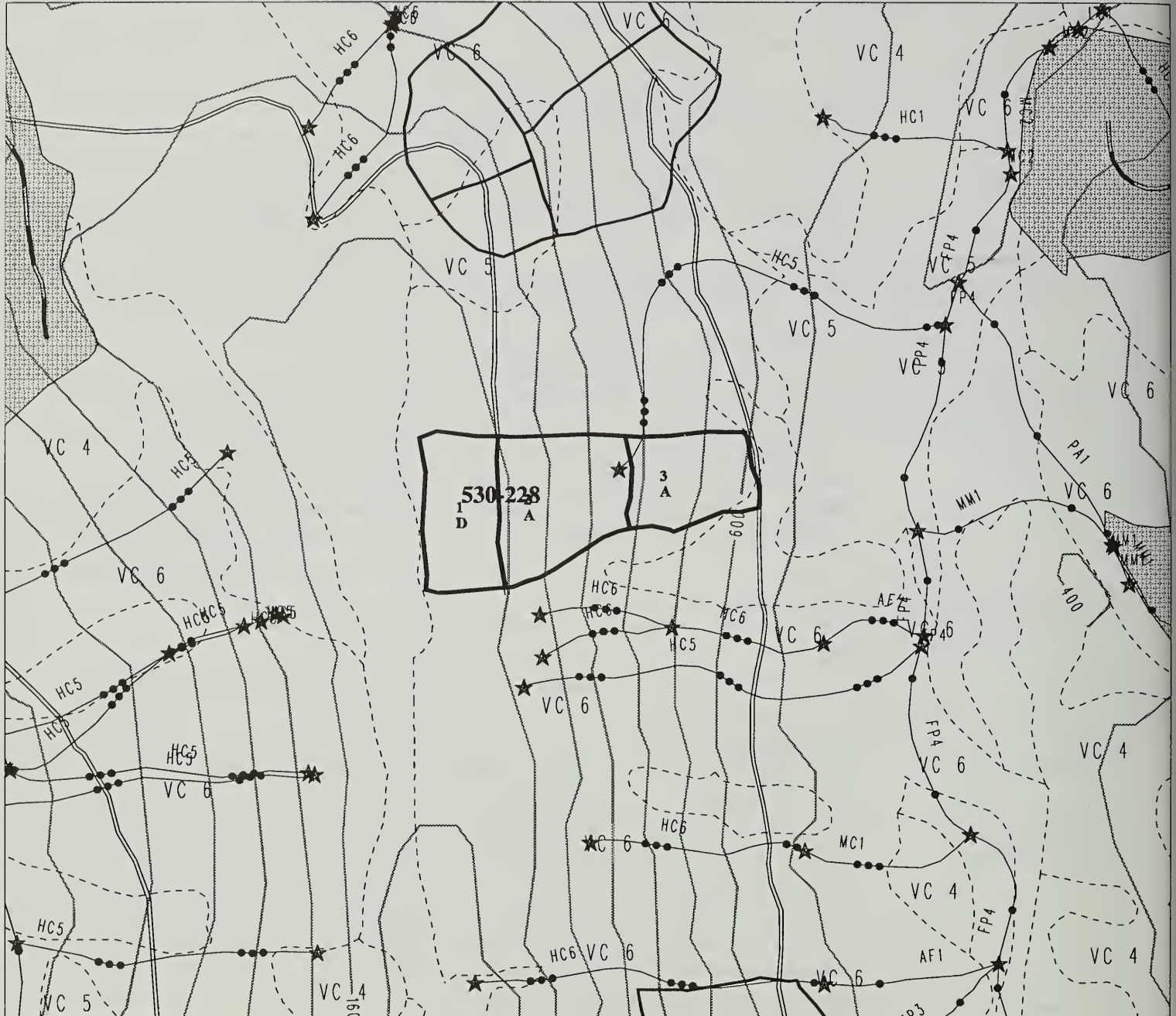
BMP's 12.6, 13.3, 13.5, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 530-228

Acres: 35.6



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 530-228                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-18

June 27, 1996



# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

Unit #: 530-228

Harvest Volume : 32.2 MBF/acre

Acres : 35.6

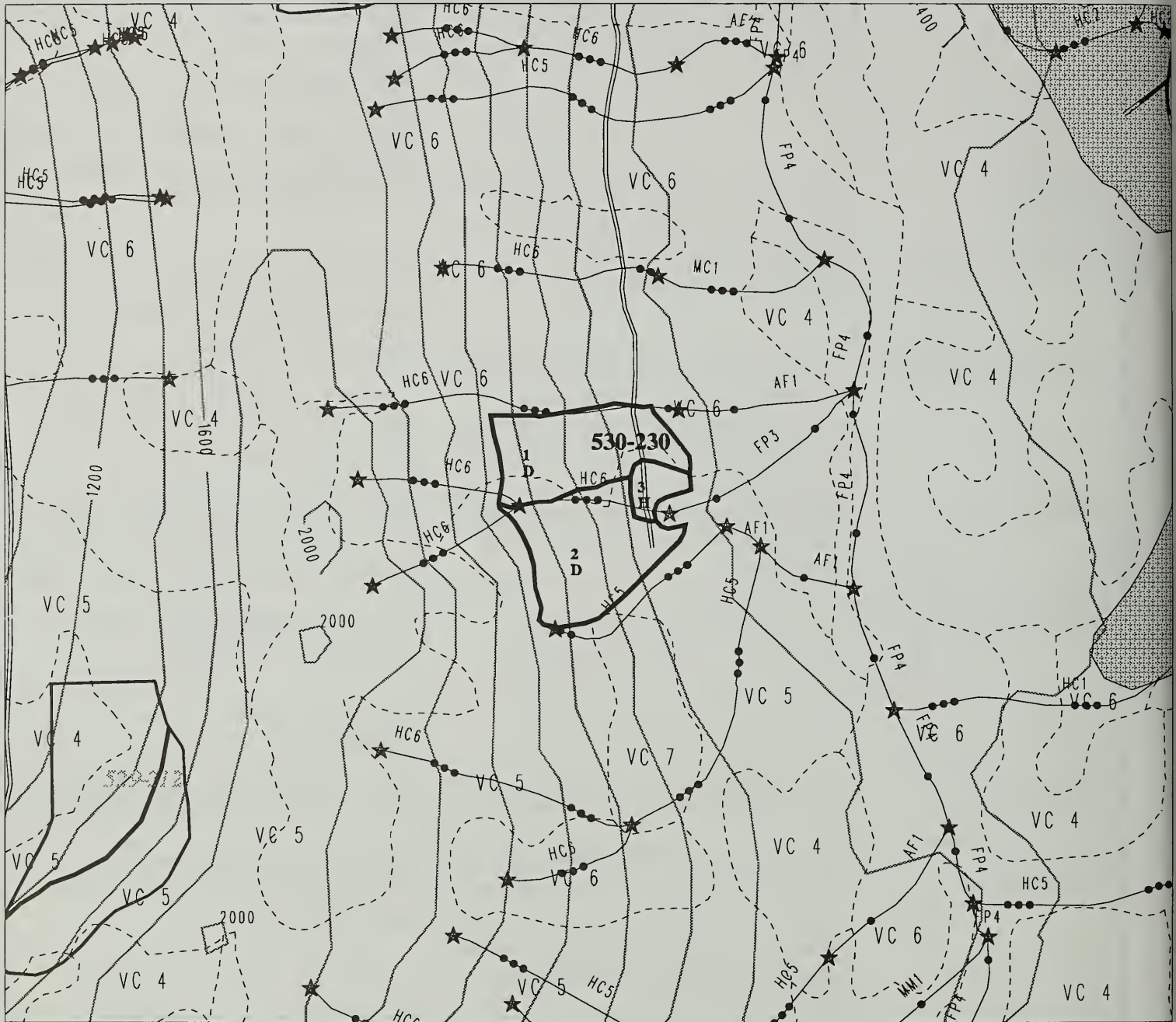
Resource Area	Concerns	Resolution
Silviculture	Steep slopes, red alder present on lower slopes. Low site productivity on upper slopes.	Regeneration Harvest Type D stripcut in setting #1 to mitigate site productivity and regeneration concerns. Regeneration Harvest Type A in settings 2 & 3. Partial suspension recommended. Eradicate red alder after reproduction is established.
Fisheries	Low potential for sediment routing to Buster Creek - ample low gradient area between unit and stream.	See water quality/quantity.
Soils	High MMI soils, bluffs in unit.	Achieve at least partial suspension where downhill yarding. Split yarding on bluffs. BMP 13.5, 13.9
Water Quality/Quantity	Stream along south boundary has sluiced to bedrock in upper portion, much deposition in lower portion. Two other Class III streams in unit - have potential to also sluice out.	Locate south unit boundary on topographic break above creek. Split yard on streams within unit to minimize channel disturbance. BMP 12.7, 13.2, 13.5, 14.10
Wildlife	Reduction in snag habitat. High quality wildlife habitat, including lateral deer migration use.	Defer entry below east road for harvest at a later date. Implement Level 1 structure retention recommendation.
Karst	No karst features.	
Visuals/Recreation	Visible from Cruiseship Route in background. Adopted Modification VQO.	Meets VQO. Leave strip in setting 1 provides residual structure.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	See files/road cards 64-77-29 and 64-77-30	Close road upon completion of harvest.
Unit Layout/ Administration	Partial suspension for downhill slackline. Shotgun uphill yarding requires tail trees at east unit boundary. Partial suspension wherever possible. 100' tower - 3 drum yarder. High MMI soils at southeast corner.	Adjust southeast unit boundary to exclude stands of alder and high MMI soils. BMP 13.5
Opportunities		

BMP's 12.7, 13.2, 13.5, 13.9, 14.10.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 530-230

Acres: 28.1



- Project Boundary
- Unit 530-230
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours

★ Potential Channel Type Change

F-20





# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

Unit #: 530-230

Harvest Volume : 23.9 MBF/acre

Acres : 28.1

Resource Area	Concerns	Resolution
Silviculture	Probability of red alder taking over site, especially at lower elevation. Probable overstocking. Slope instability. Saturated soils.	Regeneration Harvest Type D (settings 1 & 2). Harvest Type H (setting 3). Partial suspension recommended. Plan on alder eradication or control after reproduction established. Consider PCT within 20 years.
Fisheries	Three Class III streams ( 1 within and 2 adjacent) with potential for sediment transport to a Class I stream.	Put north and south boundaries on topographic break above streams. Split yard on other Class III streams; leave nonmerchantable trees within 50' of Buster Creek. 100' selective harvest buffer required at southeast unit boundary where Class I stream turns to Class III. BMP's 12.6 and 12.7.
Soils	High MMI soils; downhill yarding has potential to concentrate any surface runoff. Shallow soils, bluffs along top line.	Partial suspension to minimize soil disturbance and prevent runoff concentration. Put unit boundary below bluffs. BMP's 13.9 and 13.5
Water Quality/Quantity	Class III stream along South boundary with recent debris slide. Class III stream in middle of unit - potential for sediment transport to Class I.	Locate unit to north of stream at south boundary. Split yard, leave nonmerchantable trees within 50' of creek. BMP's 13.2, 13.3, 12.7, 14.10
Wildlife	Lateral deer migration and structural diversity - forest wetland to east of unit. High quality habitat for cavity excavators and marten. Located within a Draft Interim-designated medium COGA (USDA Forest Service, 1994b). Also within a Project-defined wildlife corridor.	Maintain Level 1 structure through Harvest Type H in setting #3, and through ITM harvest within 50' each side of Class III stream bisecting unit and within 70' of east boundary.
Karst	No karst resources.	
Visuals/Recreation	Visible from Cruisehip Route in background. Adopted Max. Modification VQO.	Meets VQO. Harvest Type H in setting 3 will leave residual structure.
Cultural	No cultural resources identified.	Report findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Accessed by Road 64-77-29.	Close road upon completion of harvest.
Unit Layout/ Administration	Swing yard - possible grapple - 54' "tower" (north and south settings) - partial suspension on high MMI soils. Shovel log or swing yard the middle setting.	Adjust north unit boundary (south) to avoid the northernmost Class III stream and adjacent high MMI soils. New boundary should begin at STA 85+00, extend west up Class III stream to established west boundary and rock bluffs.
Opportunities		

BMP's 12.6, 12.7, 13.2, 13.3, 13.5, 13.9, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 530-241

Acres: 33.6



- Project Boundary
- Unit 530-241
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours

★ Potential Channel Type Change

F-22



June 27, 1996



# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 530-241

Harvest Volume : 41.7 MBF/acre

Acres : 33.6

Resource Area	Concerns	Resolution
Silviculture	Probable overstocking in future stand.	Regeneration Harvest Type B. Retain intermediate trees and understory, and harvest dominants and co-dominants within 100-150' buffer to be left along north and east boundaries. Consider PCT within 20 yrs.
Fisheries	No fish bearing streams within or near unit.	
Soils	No special concerns.	
Water Quality/Quantity	Small Class III stream near west boundary - stable, no effect on fish bearing stream. No concern.	Apply BMP 13.2, 14.10
Wildlife	Reduction in structure diversity. High quality cavity excavator habitat. Three bald eagle nests are located east of the unit. Proposed road construction within 1/2 mile of eagle nest.	Level 1 structure retention will be met through 500' buffer along shoreline. Ensure maintenance of 330' eagle nest buffer and implement 1/2-mile seasonal blasting restrictions.
Karst	Phase 1 and 2 karst studies show unit is partially high and moderate vulnerability. Field verification documented moderate karst development in unit. Karst features noted outside of unit boundary.	Recommend that karst specialist review unit during layout and review final road location and design. Any additional karst features located should receive minimum 100' buffers. BMP 14.9
Visuals/Recreation	Potentially visible from salt water to north (Sumner Strait).	500' no-harvest buffer along shoreline - extends up over steep area and will effectively screen unit from water.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No special concerns.	
Transportation	165' of road 64-76-12 in old solution channel.	Close road upon completion of harvest.
Unit Layout/Administration	Unit designed for swing yarder. Shovel yarding is an option if additional temporary roads are established.	Maintain 500' buffer along shoreline.
Opportunities		

BMP's 13.2, 14.9, 14.10.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 532-219

Acres: 38.2



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 532-219                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-24

June 27, 1996



# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

Unit #: 532-219

Harvest Volume : 12.9 MBF/acre

Acres : 38.2

Resource Area	Concerns	Resolution
Silviculture	Poor site productivity. Poor regeneration. Saturated soil. Heavy mistletoe infection.	Harvest Type F, retain 5-10 trees per acre of yellowcedar for seed source. Site-specific retention areas were identified by field personnel. Select hemlock for harvest to minimize mistletoe infection. PCT within 20 yrs. Protect advance reprod. in marginal portion where practical to do so.
Fisheries	No fish-bearing streams in or near unit.	BMP 12.6, 13.3
Soils	No special concerns.	
Water Quality/Quantity	Class II stream, north central portion of unit surrounded by muskeg, requires TTRA buffer.	Yard away from stream. Flag 100' TTRA buffer around Class II stream that enters unit from North. BMP 12.7, 12.11, 14.10
Wildlife	Initial entry into extensive area of low elevation winter range. Large snags depleted if all five offering units harvested. Sandhill crane nesting habitat. Meets parameters for high quality goshawk habitat. Adjacent past harvest south of unit.	Retain Level 2 structure through the following: Harvest prescription; border muskeg with 200' ITM cut - maintain 12" or less; 100' buffer on Class III stream. Unit surveyed for goshawks in 1995; no detections. Close Road 64-78-29 following completion of harvest.
Karst	Based on results of Phase 1 and 2 studies, this unit is located on high vulnerability karst. Field verification documented poor to moderately well developed karst features in south-central portion of unit. These require buffers.	Avoid construction and yarding over karst features. Recommend that karst specialist review unit during layout. Any additional karst features located should receive minimum 100' buffers.
Visuals/Recreation	No concerns	
Cultural	No cultural resources identified.	Notify Forest archaeologist if any findings.
Lands	No concerns.	
Transportation	Requires 15+50 stations of 64-78-29 Road and 11+15 stations for 64-78-29.1 Road	Close roads after harvest.
Unit Layout/Administration	Hi-lead logging or swing yarding. Split yard on stream.	
Opportunities		

BMP's 12.6, 12.7, 12.11, 13.3, 14.10.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 532-220

Acres: 21.8



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 532-220                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |

**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 532-220

Harvest Volume : 10.2 MBF/acre

Acres : 21.8

Resource Area	Concerns	Resolution
Silviculture	Low site productivity. Poor regeneration around muskegs. Mistletoe infection within canopy. Saturated soils.	Harvest Type F. Retain 5-10 trees per acre of yellowcedar for seed source. Retain muskeg/low volume areas. Remove higher volume patches. PCT within 20 yrs. Protect advanced reproduction in marginal portion where practical.
Fisheries	No fish-bearing streams in unit.	
Soils	No special concerns.	
Water Quality/Quantity	No special concerns.	BMP 12.11, 14.10
Wildlife	Extensive muskeg habitat potential nesting for the sandhill crane and Vancouver Canada goose use east of unit. Unit is within Trumpeter swan winter habitat. Reduction in structural diversity.	200' ITM along muskeg at east boundary - retain trees 12" dbh and smaller to minimize disturbance. Implement timing restrictions if harvest to occur within 125 meters of active goose areas. Implement 1/2 mile disturbance buffer if swans are present. Level 1 structure retention will be maintained through this ITM and the harvest prescription. Close Road 64-78-29 following completion of harvest.
Karst	No karst features.	
Visuals/Recreation	Visible from Cruisehip Route in background. Adopted Modification VQO.	Shape and feather unit, especially east and west edges, to avoid creation of rectilinear opening.
Cultural	No cultural resources identified.	
Lands	No concerns	
Transportation	Requires Rd 64-78-29 to be constructed to STA 39+90.	Close road 64-78-29 after harvest.
Unit Layout/Administration	Swing yarding along length of road. Muskeg around boundaries.	Type F within higher volume patches.
Opportunities		

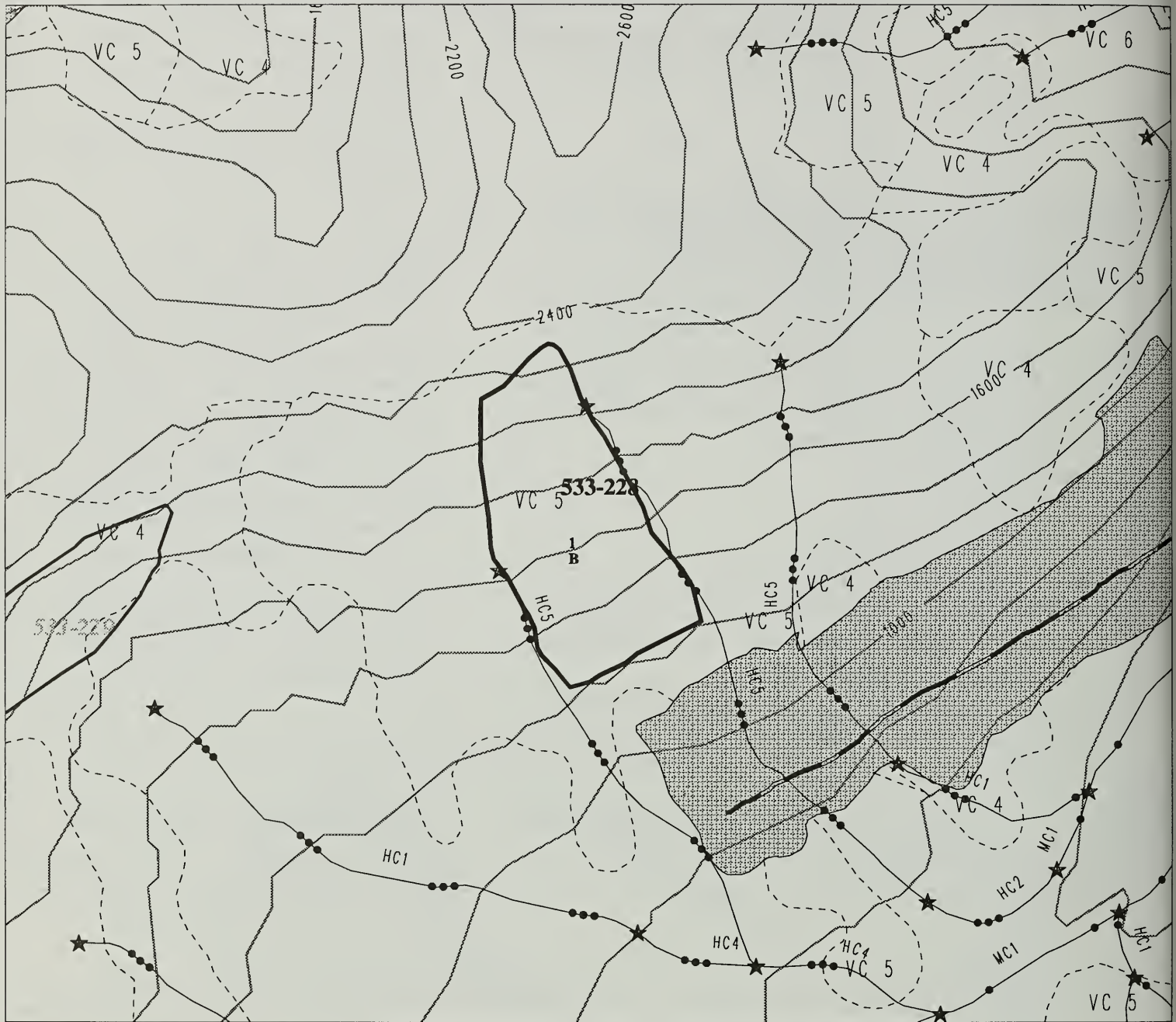
BMP 12.11, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 533-228

Acres: 39.3



- Project Boundary
- Unit 533-228
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours

★ Potential Channel Type Change



F-28

June 27, 1996

**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 533-228

Harvest Volume : 26.2 MBF/acre

Acres : 39.3

Resource Area	Concerns	Resolution
Silviculture	Hemlock overstocking at lower elevations. Protection of soil and advance reproduction at high elevations. Slope instability.	Regeneration Harvest Type B. Full suspension will be achieved using helicopter yarding. Retain all unmerchantable stems to protect soils and to provide shelter for regeneration. Consider PCT within 20 yrs.
Fisheries	No fish-bearing streams in or near unit. Harvest within HGC RMA will exceed threshold of 25 percent.	Retain timber with HGC stream RMA to avoid exceedance of HGC harvest threshold. Selectively harvest windthrow prone trees as necessary to provide windfirm retention zone and protect slope stability and water quality.
Soils	High MMI soils. Long downhill yarding distance - potential to concentrate subsurface flows.	Achieve at least partial suspension throughout unit. Apply BMPs 13.5, 13.9
Water Quality/Quantity	Class III streams along east and west boundaries - stable; good sediment trapping as gradient decreases downslope.	Use streams as east and west boundaries. Yard away from streams and follow CT6.51. Apply BMPs 12.7, 13.2, 13.16
Wildlife	Further reduction of Big Creek drainage forested habitat	Level 2 structure retention through harvest prescription.
Karst	No karst features.	
Visuals/Recreation	No concerns.	
Cultural	No cultural resources identified.	
Lands	No concerns.	
Transportation	59 stations of road; does not access any units beyond this one due to V-notch streams.	Helicopter log to existing Rd. 20-805.
Unit Layout/Administration	Conventional logging systems cannot provide required partial suspension.	Economical helicopter yarding is possible due to short yarding distance to 20-805 Road.
Opportunities	Helicopter log unit.	

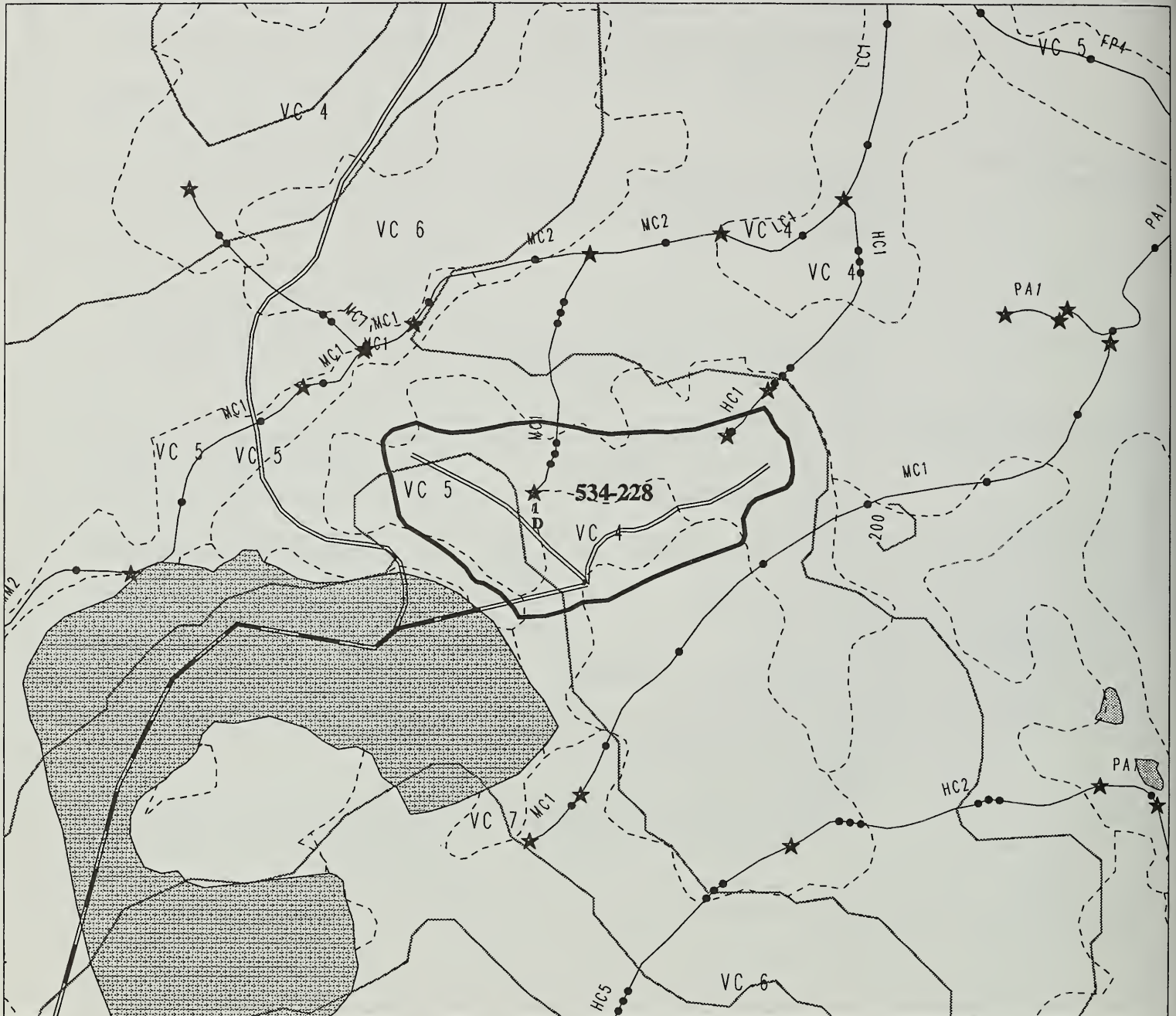
BMP's 12.7, 13.2, 13.5, 13.9, 13.16



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 534-228

Acres: 51.5



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 534-228                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

Unit #: 534-228

Harvest Volume : 18.8 MBF/acre

Acres : 51.5

Resource Area	Concerns	Resolution
Silviculture	Overstocking.	Regeneration Harvest Type D; retain buffers around karst features. Consider PCT within 25 yrs.
Fisheries	Class I stream along south boundary; coho fry observed; good rearing habitat. Provide future source of large woody debris.	100' required buffer, plus 50' selective harvest buffer along Class I stream. Apply BMP 12.6
Soils	No special concerns.	
Water Quality/Quantity	Class III stream flows northeast through unit - potential to damage banks during yarding.	Yard away from Class III stream. Apply BMP 12.7, 12.11, 13.16, 14.8, 14.10
Wildlife	Depletion of snag habitat and structural diversity.	Maintain west boundary 100' from edge of muskeg and 100' stream buffer along southeast boundary will retain Level 1 structure. Close Road 65-79-05 following completion of harvest.
Karst	Based on results of Phase 1 and 2 studies, this unit is located on high vulnerability karst due to moderately-developed karst features (sinkholes, grikes, solution channels. Field survey identified poor to moderate karst development in southern and southwestern portions of unit, including few moderately developed sinkholes.	Effects of harvest and road-building on broadly dispersed karst features can be mitigated. Maintain 100' vegetation buffer around individual sinkholes. Avoid construction over sinkholes; directional felling away from karst features. Avoid yarding over significant karst features (caves, vertical shafts, sinkholes, or insurgences). Recommend that karst specialist review unit during layout. Any additional karst features located should receive minimum 100' buffers.
Visuals/Recreation	No concerns	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	1660' temporary road 65-79-05.2 required to split yard creek in center of unit. Road 65-79-05 needs to be constructed to STA 20+00.	Close Road 65-79-05 after completion of harvest. Reasonable access will be provided for mining claims.
Unit Layout/Administration	Swing yard w/grapples - portion of unit can be logged with a mobile tailhold; partial suspension should be available.	
Opportunities		

BMP's 12.6, 12.7, 12.11, 13.16, 14.8, 14.10.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 535-208

Acres: 38.0



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 535-208                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 535-208

Harvest Volume : 17.7 MBF/acre

Acres : 69.3

Resource Area	Concerns	Resolution
Silviculture	Hemlock overstocking. Cedar regeneration. Shallow soils. Slope instability.	Regeneration Harvest Type D through site-specific retention areas identified by field personnel. Consider PCT within 20 yrs. to enhance species diversity.
Fisheries	Class I stream to east of unit.	Muskegs and noncommercial forest in valley bottom creates wider than the 100' required buffer along majority of stream. SE corner is 100' from stream. A 50' selective harvest buffer also required along stream. Apply BMP 12.6
Soils	High MMI soils in central portion of unit where slopes >60%. Thin soils, numerous rock bluffs - minimize soil disturbance. Field investigations in 1995 identified a recent slide within the proposed unit.	Achieve at least partial suspension where slopes >60%. Drop the south setting of the unit to protect soils around the area of recent slide activity. Apply BMPs 13.5, 13.9
Water Quality/Quantity	One Class III stream in unit - not incised. stable.	Remove any logging-related debris (CT6.51). BMP 12.7, 12.11, 14.8, 14.10
Wildlife	Reduction in structural diversity. Watershed is below snag density guidelines (275 snags/100 acres). Additional roading into an area with a high existing road density. Meets parameters for high quality goshawk habitat.	Concern Level 3 structure retention through designation of 3 retention areas in addition to 100' stream buffer. Unit surveyed for goshawks in 1995; no detections. Close Road 66-79-13 and all associated spur roads following completion of harvest.
Karst	No karst features.	
Visuals/Recreation	No concerns.	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires construction of Road 66-79-13 to station 73+20 and spur 66-79-13.2. 37 stations of road beyond unit 535-207 which include approximately 500 feet of full bench construction on slopes up to 80 percent.	Close Road 65-79-13 and associated spurs after completion of harvest.
Unit Layout/Administration	Large tower with shotgun and some slackline rigging recommended. Some swing yarding necessary. Hanging across Class I stream may be necessary for some roads.	Modify unit boundary to exclude wildlife retention areas during final layout.
Opportunities		

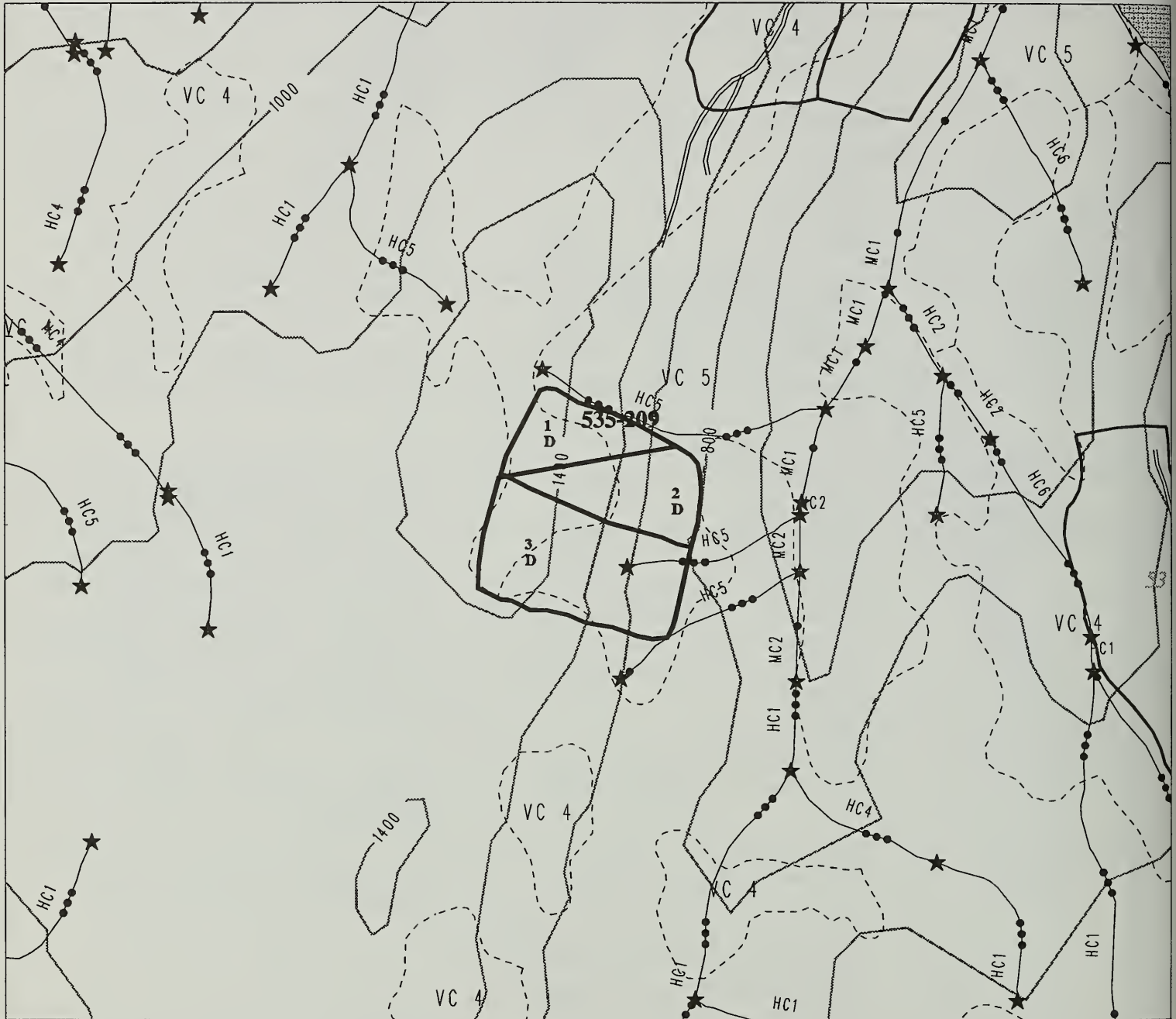
BMP's 12.7, 12.11, 13.5, 13.9, 14.8, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 535-209

Acres: 36.8



- Project Boundary
- Unit 535-209
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours



★ Potential Channel Type Change

F-34

July 02, 1996

**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 535-209

Harvest Volume : 17.4 MBF/acre

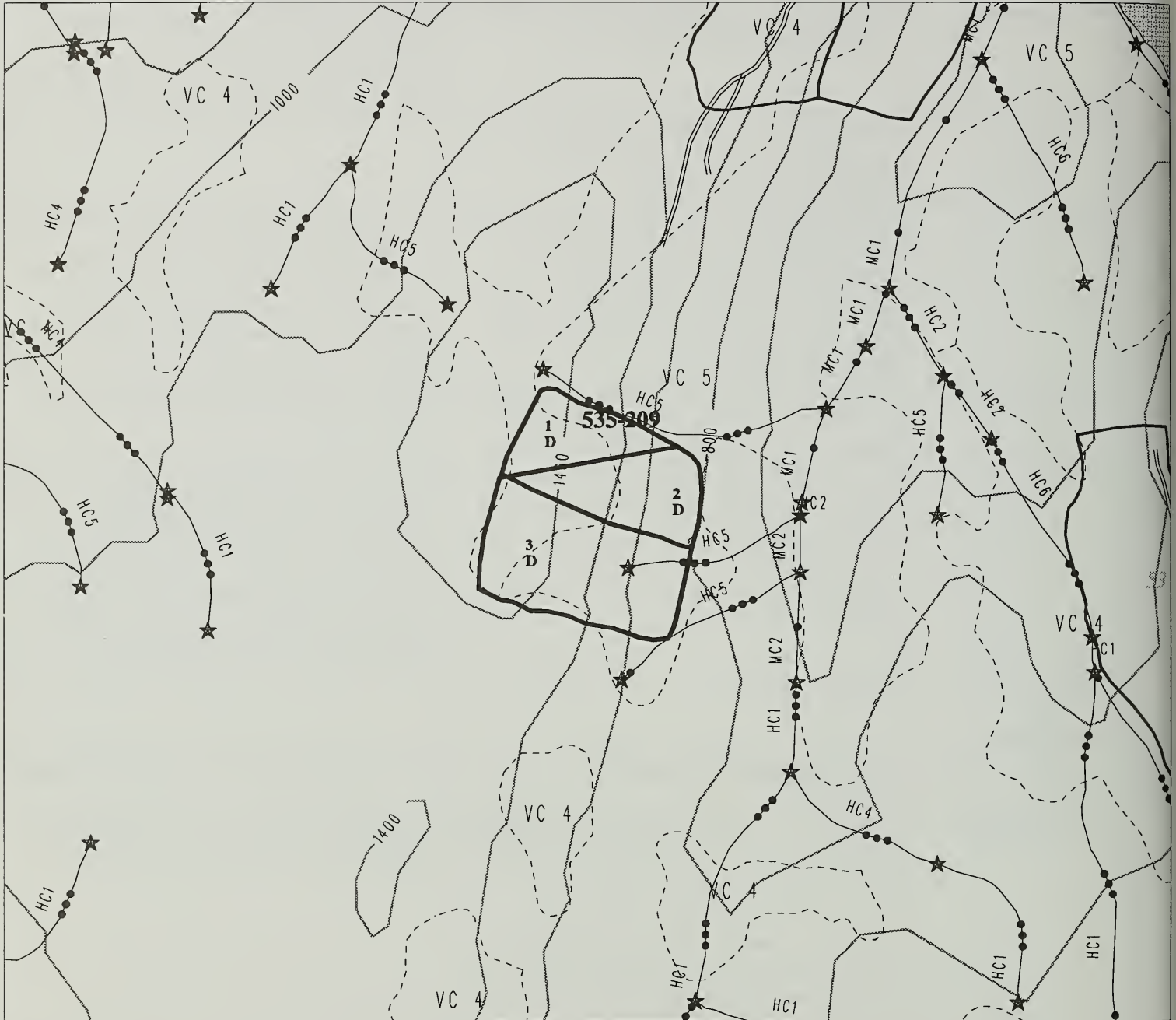
Acres : 36.8

Resource Area	Concerns	Resolution
Silviculture	Steep slopes. Slope instability. Hemlock overstocking. Cedar regeneration.	Regeneration Harvest Type D. Require partial suspension. Retain non-merchantable trees <12' dbh throughout the unit. Consider PCT within 20 yrs.
Fisheries	Low potential for sediment transport to fish stream east of unit - ample sediment buffering in valley bottom.	
Soils	Recent slump to east of unit occurred where seeps emerge; older slide also observed south of this slump. Seeps emerge ~650' elevation; very wet, with high risk of failure here. Majority of unit contains high MMI soils with >60% slope.	Put bottom line (east boundary) at 700' elev. and above to retain trees in very wet, unstable area. Achieve at least partial suspension throughout unit. (Helicopter will achieve full suspension.) Apply BMPs 13.2, 13.5, 13.9, 13.15.
Water Quality/ Quantity	Five seep channels emerge in lower portion of unit (some outside of unit as flagged). Evidence of debris movement, instability.	Remove logging-related debris (CT6.51). Apply BMPs 12.7, 13.5, 12.11, 14.10.
Wildlife	Loss of dense snag and diverse structural habitat. Watershed is currently below snag density guidelines (275 snags/100 acres). Increased road density in an area already highly roaded. Meets parameters for high quality goshawk habitat.	Concern Level 3 structure retention through buffer along Class III stream (north boundary), and west of road right-of-way including a retention area extending into center of unit (see map). Unit surveyed for goshawks in 1995; no detections. Close Road 65-79-13 following harvest.
Karst	No karst features.	
Visuals/ Recreation	No concerns.	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Helicopter - potential landing areas on large benches in unit 535-208 on Rd. 65-79-13. Ground based - requires construction of Rd. 65-79-13 beyond unit 535-208 which includes: 5 stations of maximum favorable grade; 13 stations of full bench construction, 2.5 stations through severe bluffs. Extensive rock blasting of conglomerate will be required.	Close Road 65-79-13 after completion of harvest, if unit not helicopter logged.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 535-209

Acres: 36.8



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 535-209                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

**Unit #: 535-209 (Continued)**

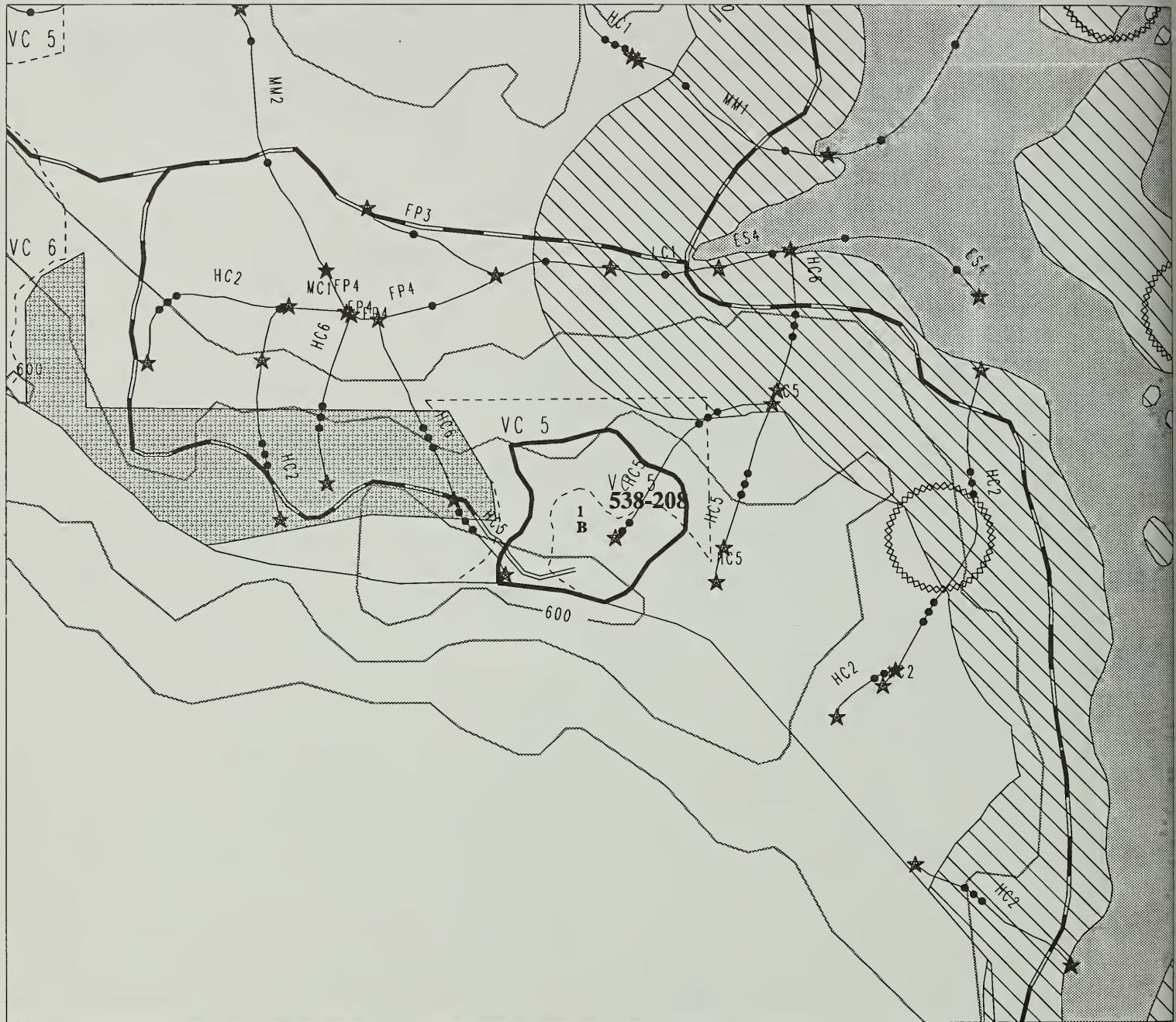
Unit Layout/ Administration	<b><u>Helicopter logging recommended</u></b> or large tower if ground based systems used. Large tower/yarder with M.S.P. carriage capabilities. Guy stumps marginal for large tower, tiebacks necessary. Requires tailholds rigged across draw with 2600'± of skyline. Tailholds will require extensive tieback networks due to shallow, wet soils on slope across draw. Class I stream crossed by skyline.	Helicopter log unit. Modify unit boundaries to exclude wildlife retention areas as noted on map. Consider adding a group select, partial cut setting to the east. Land logs on bench areas in unit 535-208, on Rd. 65-79-13. Apply BMPs 13.5 and 13.9
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BMP's 12.7, 12.11, 13.2, 13.5, 13.9, 13.15, 14.10.

# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 538-208

Acres: 20.5



- Project Boundary
- Unit 538-208
- Other Units
- - - Timber Type Boundary
- ⊗ Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream
- ★ Potential Channel Type Change

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours





# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 538-208

Harvest Volume : 19.8 MBF/acre

Acres : 20.5

Resource Area	Concerns	Resolution
Silviculture	Hemlock overstocking. Salmonberry incursions.	Regeneration Harvest Type B. Consider PCT within 20 yrs.
Fisheries	No fish-bearing streams in or near unit.	
Soils	Prevent increased erosion and sedimentation (east half may be within domestic supply watershed.).	Achieve at least partial suspension in east half of unit. BMPs 13.5, 13.9
Water Quality/Quantity	One Class III stream flows north through eastern portion of unit. Stable channel, not incised. Prevent increased sediment. One seep, Class III, within eastern portion of unit.	Locate east unit boundary to west of eastern stream. Directional fell away from stream. Achieve at least partial suspension in eastern half of unit. BMPs 12.7, 13.2, 13.16, 14.10.
Wildlife	Watershed is currently at minimum snag density levels (275 snags/100 acres). Meets parameters for high quality goshawk habitat.	Implement Concern Level 3 structure retention recommendations through retention of trees in blind lead and 100' buffer on Class III stream flowing along west boundary. Unit surveyed for goshawks in 1995; no detections.
Karst	No karst features.	
Visuals/Recreation	No concern.	
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	Private land north and east of unit.	Locate property boundary prior to final layout.
Transportation	Road 66-79-35 11 STA; 175' full bench.	Close road upon completion of harvest.
Unit Layout/Administration	Swing yard west portion of unit; use 100' tower with live skyline and haulback capability. Partial suspension required on east half of unit. Run multiple profiles to determine limits of loggability (blind lead areas on west half and partial suspension on east half). North and east boundaries are on private land.	Establish 100' buffer along Class III stream along west boundary. Retain wildlife leave area along north and east boundary in blind lead area.
Opportunities		

BMP's 12.7, 13.2, 13.5, 13.9, 13.16, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 539-210

Acres: 63.8



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 539-210                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-40

July 02, 1996

# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 539-210

Harvest Volume : 18.8 MBF/acre

Acres : 63.8

Resource Area	Concerns	Resolution
Silviculture	Some steep slopes, shallow soils. Overstocking.	Regeneration Harvest Type C. Partial suspension where practical (Helicopter logging will achieve full suspension throughout unit). Consider PCT within 20 yrs.
Fisheries	Class I stream west of unit flows into Exchange Lake north of unit. Stream supports adfluvial trout population. Moderate potential for windthrow in buffer around lake.	100' required buffer on Class I stream. 100' no-harvest buffer, plus 400' selective harvest buffer on lake will provide windfirm buffer. BMP 12.6
Soils	Steep slopes, shallow soils in southeast corner. Minimize disturbance.	Achieve partial suspension in southeast corner (area south of eastern landing). Full suspension will be achieved through helicopter logging. BMPs 13.5, 13.9
Water Quality/Quantity	Three stable Class III streams in unit; not incised.	Yard away from the two western streams. Directional fall away from all 3 designated streams and remove logging debris (CTG.51). Apply BMP 12.7, 13.16.
Wildlife	Riparian areas along lake to north and stream to west are travel corridors. High bear use along lake. Potential waterfowl nesting habitat at muskeg between unit and lake.	Maintain 100' no-harvest buffer plus 400' selective harvest buffer along lake and 100' buffer along Class I stream to west. This will also maintain Concern Level 1 structure within the unit.
Karst	High vulnerability karst features proximal to unit. Proposed access road would cross well-developed sinkholes and grike. Unit is on poorly-drained conglomerate. Cave located on limestone/clastic contact east of unit and downslope of access road location.	Road eliminated due to karst concerns. Unit field-verified during 1994 Phase 2 studies. Harvest of unit is not anticipated to affect karst resources.
Visuals/Recreation	No concerns.	
Cultural	No cultural resources.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires road 66-79-12 (36 stations), 2 stations of full bench with rock blasting, 12 foot thin-cut for 50 feet due to knife edge ridge. 13 stations at 12 percent adverse grade.	Road eliminated due to karst concerns.
Unit Layout/Administration		Unit to be helicopter logged to adjacent, existing landings.
Opportunities		

BMP's 12.6, 12.7, 13.5, 13.9, 13.16.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 539-222

Acres: 82.8



- Project Boundary
- Unit 539-222
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream
- Potential Channel Type Change

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours



F-42

July 02, 1996



**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 539-222

Harvest Volume : 18.2 MBF/acre

Acres : 82.8

Resource Area	Concerns	Resolution
Silviculture	Multi-story and multi-age stand. Mistletoe. Overstocking.	Harvest Type E (Overstory removal). Mark individual trees or very small clumps that are older or defective (includes infected with mistletoe). Protect second growth and reproduction. Consider PCT within 10 yrs.
Fisheries	Class I stream runs north through unit. Numerous trout and coho observed. Good rearing habitat. Small beaver ponds near center of unit. Bank erosion occurring in upper reaches of stream. Also, access road will cross Class I stream.	100' no-commercial harvest buffer plus 100' selective harvest buffer. Locate crossing perpendicular to channel and minimize length of road in riparian area. Timing requirements apply for road crossing. BMPs: 12.6, 12.7, 14.6, 14.10, 14.17
Soils	No special concerns.	Apply BMP 13.5.
Water Quality/Quantity	See fisheries.	Apply BMP 12.11, 14.10, 14.17
Wildlife	High wildlife use area - estuary to west of unit. High-quality habitat for cavity excavators, marten, deer, and otter. Proposed road construction within 1/2 mile of eagle nest. Unit is within Trumpeter swan winter habitat. Increased roading in high-quality wildlife area.	1000' estuary buffer to north. Also, trees to west of stream will not be harvested this entry. Snag densities will be maintained through 1000' estuary buffer, 100' TTRA buffer, retention of marginal timber to west and 100' selective harvest buffer. Implement 1/2 mile seasonal blasting restrictions. Implement 1/2 mile disturbance buffer if swans are present. Close Road 66-80-05 after completion of harvest.
Karst	Field survey identified poor to moderate karst development on ridge on eastern portion of unit, and moderately well developed karst on southern portion south of Class I stream. There is potential for finding significant karst features in or adjacent to unit.	Karst specialist should review unit during layout. Achieve partial suspension or maintain 100' buffers around karst features. Harvest is not expected to adversely affect karst features.
Visuals/Recreation	Potential to be visible from foreground views within Exchange Cove.	1000' estuary buffer and overstory removal visually screen unit and help meet Retention VQO.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Road 66-80-05 59 STA (see Rd 66-80-05 file). Road parallels Class I stream for a short distance. One Class I stream crossing (see Fisheries).	Close Road 66-80-05 after completion of harvest. Adjust alignment of road to establish perpendicular channel crossing. Minimize length of road in riparian area and TTRA buffer.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 539-222

Acres: 82.8



- Project Boundary
- Unit 539-222
- Other Units
- Timber Type Boundary
- Eagle Nest Buffer (330ft)
- Existing Roads
- Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream
- Potential Channel Type Change

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours



F-44

July 02, 1996

# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 539-222 (Continued)

Unit Layout/Administration	Overstory removal - swing boom yarder with mechanical slack pulling capabilities. Trees marked for removal will need to be done by a person experienced in both silviculture and logging. Unit is laid out with a 500' shoreline buffer to the north and northwest; this needs to be changed to reflect a required 1000' estuary buffer.	Adjust north and northwest unit boundaries to reflect 1000' estuary buffer to north and west.
Opportunities	Increased access to shoreline with sheltered beach and nearby island. Possible campground location.	Road to be closed to vehicles due to wildlife concerns. Foot access only.

BMP's 12.6, 12.7, 12.11, 13.5, 14.6, 14.10, 14.17.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 540-206

Acres: 25.3



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 540-206                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



F-46

July 02, 1996



# UNIT PLAN & LAYOUT CARD

## LAB BAY PROJECT AREA

Unit #: 540-206

Harvest Volume : 12.7 MBF/acre

Acres : 25.3

Resource Area	Concerns	Resolution
Silviculture	Windthrow potential. Salmonberry incursions. Saturated soils. Cedar regeneration.	Harvest Type E; retain cedar <12" dbh. Avoid or protect advanced reproduction during logging when practical.
Fisheries	No fish-bearing streams in unit. One Class I and one Class IIb crossing required (see Transportation).	Locate west unit boundary min. 100' from Class II stream. Apply timing restriction to both stream crossings. BMPs 14.6, 14.10, 14.14, 14.16, 14.17
Soils	No special concerns	
Water Quality/Quantity	Small Class III stream flows east through northern portion of unit. It is stable and does not feed into fish-bearing stream.	Remove logging-related debris (CT6.51). Apply BMPs 12.7, 12.11
Wildlife	Maintain forested corridor along shoreline. Increased roading into a high quality wildlife area. Eagle nest buffer adjacent to NE corner.	500' shoreline buffer and harvest prescription will maintain snags over time. Ensure maintenance of 330' eagle nest buffer. Institute timing restriction if blasting within 1/2-mile of nest. Close Road 66-80-04 after harvest.
Karst	No karst features.	
Visuals/Recreation	Visible from saltwater. Within an identified important visual area.	500' shoreline buffer will screen lower portion of unit.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires first 57 stations of Road 66-80-04. 13 stations 12% adverse grade. 5 stations full bench. Requires Road 66-80-04.2 and Road 66-80-04.1; no special concerns over 15 stations. One Class I and one Class IIb crossing required; apply timing restrictions.	Close Road 66-80-04 after completion of harvest.
Unit Layout/Administration	Swingyard entire unit. Blowdown on east line is old, good tailholds remain. Potential ITM to protect reproduction. Young timber along west line in middle of unit should be retained. Road location facilitates postponed harvest of this patch.	Requires first 57 stations of Rd 66-80-04. 13 stations 12% adverse grade. 5 stations full bench. Requires Road 66-80-04.2 and Road 66-80-04.2-1; no special concerns over 15 stations.
Opportunities		

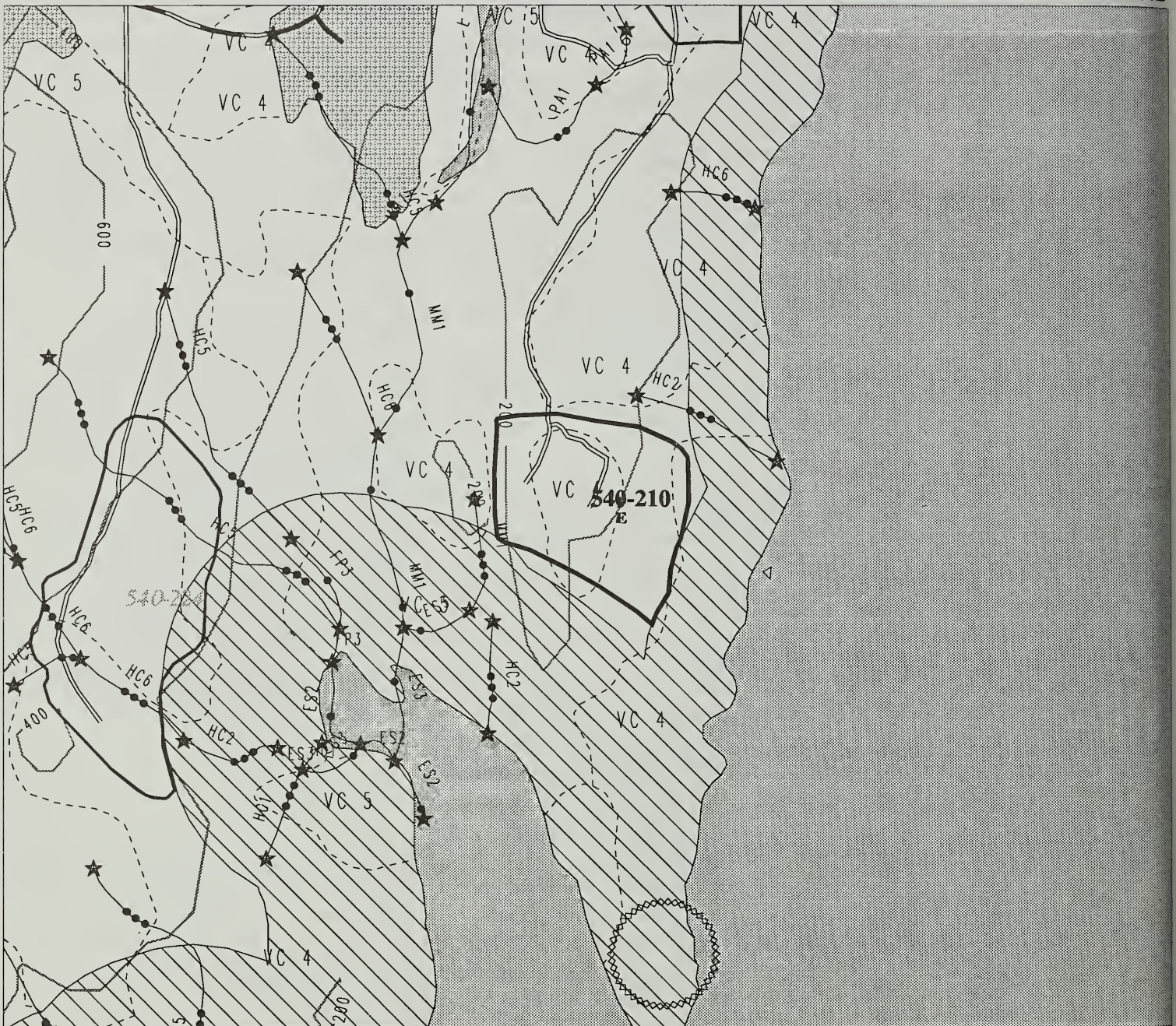
BMP's 12.7, 12.11, 14.6, 14.10, 14.14, 14.16, 14.17.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 540-210

Acres: 26.2



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 540-210                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |



**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 540-210

Harvest Volume : 19.8 MBF/acre

Acres : 26.2

Resource Area	Concerns	Resolution
Silviculture	Soil disturbance. Windthrow potential. Salmonberry incursions. Cedar regeneration.	Harvest Type F (Seed tree). Protect cedar species. Partial suspension where practical. Consider PCT within 20 yrs.
Fisheries	No fish-bearing streams in or near unit.	
Soils	High MMI soils where slopes >60%. Riparian soils adjacent to unit on west side.	Adjust west unit boundary approximately 150' eastward to eliminate harvest on riparian soils. Apply BMPs 12.6, 13.2, 13.5, 13.9
Water Quality/Quantity	Class III stream on east side of unit, north of unit boundary. Stable, moss-covered channel. Small, stable Class III stream flows south out of west portion of unit.	Remove any logging-related debris(CT6.51). BMPs 12.7, 12.11, 14.10
Wildlife	Maintain forested corridor along shoreline. Increased roading into high-quality wildlife area. Proposed road construction within 1/2 mile of eagle nest. Meets parameters for high quality goshawk habitat.	500' shoreline buffer. Concern Level 1 structure retention will be maintained through shoreline buffer and harvest prescription. Implement 1/2 mile seasonal blasting restrictions. Unit surveyed for goshawks in 1995; no detections. Close road after harvest.
Karst	No karst features.	
Visuals/Recreation	Visible from salt water.	500' shoreline buffer will screen lower portion of unit.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands		
Transportation	Road 66-80-04 (~43 stations) required to access unit. None.	Close Road 66-80-04 after completion of harvest.
Unit Layout/Administration	Swing yarder - running skyline and shotgun. Partial suspension is required and should be available. 900' maximum yarding distance with an average of 200' to 300'. Riparian soils at west boundary and estuary south of unit.	Adjust west unit boundary as per soils recommendation above. Maintain south boundary at 1000' from estuary.
Opportunities		

BMP's 12.6, 12.7, 13.2, 13.5, 13.8, 13.9, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 551-219

Acres: 16.3



- Project Boundary
- Unit 551-219
- Other Units
- - - Timber Type Boundary
- xxxxxx Eagle Nest Buffer (330ft)
- Existing Roads
- - - Proposed Roads
- Class I Stream
- Class IIa Stream
- Class IIb Stream
- Class III Stream

- Water
- Beach Fringe/Estuary
- Second Growth
- 200 ft contours

★ Potential Channel Type Change

F-50





**UNIT PLAN & LAYOUT CARD  
LAB BAY PROJECT AREA**

Unit #: 551-219

Harvest Volume : 20.8 MBF/acre

Acres : 16.3

Resource Area	Concerns	Resolution
Silviculture	Soil site productivity. Saturated soils. Windthrow potential.	Regeneration Harvest Type D. Retain at least 2 yellowcedar/ac between settings and along unit boundaries. Avoid soil disturbance. Consider PCT within 20 yrs.
Fisheries	No fish-bearing streams in or near unit.	
Soils	No special concerns.	
Water Quality/Quantity	Class III stream flows northwest through center of unit into small beaver pond. Stream is small, not incised, and stable. Another Class III stream flows north through eastern portion of unit; does not flow into fish-bearing stream.	Directional fall away from identified streams and do not yard logs up the channels. Remove logging-related debris (CT6.51). Apply BMPs 12.7, 13.16, 14.10
Wildlife	Beaver pond and riparian area north of unit - high wildlife use area. Maintain future snag habitat. Entry into previously unentered area. Proposed road construction within 1/2 mile of eagle nest. Meets parameters for high quality goshawk habitat.	Retention area and 100' buffer between unit and pond will achieve Concern Level 1 structure retention. Implement 1/2 mile seasonal blasting restrictions. Unit surveyed for goshawks in 1995; no detections. Consult with District Biologist regarding timing of road construction. Close all roads on Thorne Island following completion of harvest.
Karst	No karst features.	
Visuals/Recreation	Visible from Whale Passage (on Thorne Island) in middleground. Adopted Partial Retention VQO.	Leave tree area screens lower portion of unit. Meets VQO. Feather and shape edges to avoid rectilinear appearance.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires construction of Road 66-80-28A to E.O.P. 30 stations beyond unit 551-216. Two small muskeg patches crossed and skirted on this segment.	The economic feasibility should be analyzed for road construction versus helicopter logging the unit to a landing in unit 551-216. Close all roads on Thorne Island following completion of harvest.
Unit Layout/Administration	Swing yard half uphill, half downhill. Running skyline; partial suspension for most of unit is possible. Possible hi-lead configuration.	
Opportunities		

BMP's 12.7, 13.16, 14.10.



# LAB BAY PROJECT HARVEST UNIT DESIGN CARD

Unit #: 551-230

Acres: 31.2



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | Project Boundary              |  | Water                |
|  | Unit 551-230                  |  | Beach Fringe/Estuary |
|  | Other Units                   |  | Second Growth        |
|  | Timber Type Boundary          |  | 200 ft contours      |
|  | Eagle Nest Buffer (330ft)     |  |                      |
|  | Existing Roads                |  |                      |
|  | Proposed Roads                |  |                      |
|  | Class I Stream                |  |                      |
|  | Class IIa Stream              |  |                      |
|  | Class IIb Stream              |  |                      |
|  | Class III Stream              |  |                      |
|  | Potential Channel Type Change |  |                      |

F-52



July 02, 1996

# UNIT PLAN & LAYOUT CARD LAB BAY PROJECT AREA

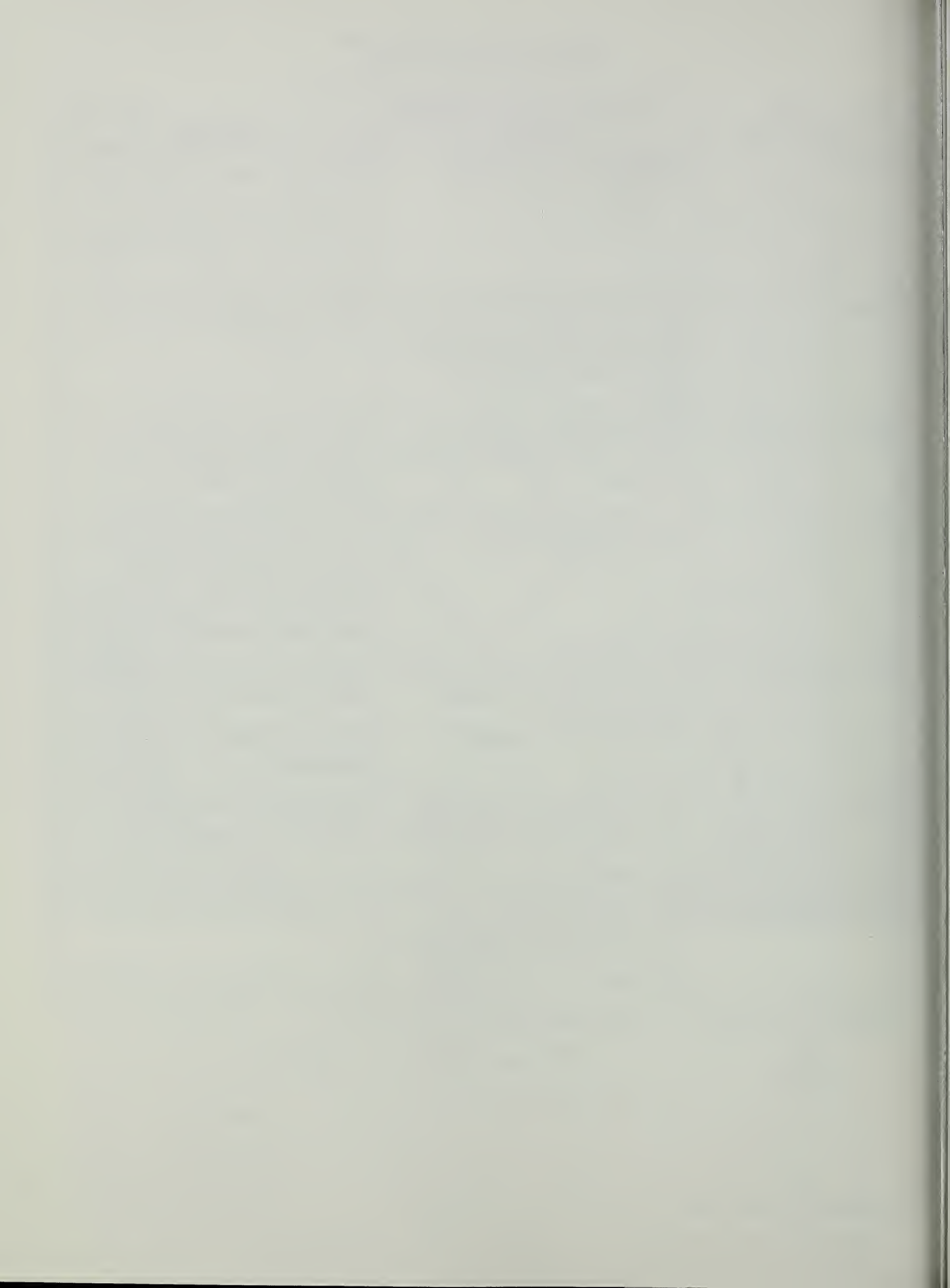
Unit #: 551-230

Harvest Volume : 12.1 MBF/acre

Acres : 31.2

Resource Area	Concerns	Resolution
Silviculture	Saturated soils. Small amount of windthrow. Low site productivity.	Regeneration Harvest Type D. Retain at least 2 yellowcedar/ac between settings and along unit boundaries. Retain area of unmerchantable timber in south portion of unit. Avoid soil disturbance where practical. Consider PCT within 20 yrs.
Fisheries	Class II stream flows into a Class I stream along northeast boundary. Shows fair rearing habitat. Steep upper banks. Retain riparian vegetation for root stability.	100' required buffer along Class I and II stream. Apply BMP 12.6, 12.7
Soils	No special concern.	
Water Quality/Quantity	Class III stream flows along southeast boundary. Small, slightly incised, stable. See fisheries.	Class III stream requires no special protection. Remove logging-related debris (CT6.51). Apply BMP 12.7, 14.10
Wildlife	Entry into previously unaltered area. Maintain future snag habitat.	Concern Level 1 structure would be achieved through 100' stream buffer and leave area of standing dead trees in southern portion of unit. Yard away from this area. Close all roads on Thorne Island following completion of harvest.
Karst	No karst resources.	
Visuals/Recreation	Visible from Whale Passage (on Thorne Island) in middleground. Adopted Modification VQO.	Retain area in south for visual buffer, as shown on map Meets VQO.
Cultural	No cultural resources identified.	Report any findings to Forest archaeologist.
Lands	No concerns.	
Transportation	Requires construction of Road 67-80-04B to stations 35+00 and spur Road 67-80-04.3 (7 stations) with 1 stations of 70% sideslope.	Close all roads on Thorne Island following completion of harvest.
Unit Layout/Administration	Swing yarder recommended. Tailholds beyond Class I in northeast corner. Greater than 100' buffer flagged along stream on northeast boundary due to topography.	
Opportunities		

BMP's 12.6, 12.7, 14.10.





# **Appendix G**

## **Sample Integrated Silvicultural Prescriptions**



# LAB BAY EIS -- UNIT RESOURCE DATA SHEET & PRESCRIPTION

UNIT NO.: 528-204 LUD: 15 ACRES: 14  
MGT. AREA: K01 QUAD: B5SW PHOTO NO.: 890-47(1991)

## UNIT ATTRIBUTES

ELEVATION: <u>300-560</u>	FT.	FOREST TYPE: <u>HEMLOCK</u>
AVG. SLOPE: <u>25</u>	%	AGE: <u>150+</u>
ASPECT: <u>SW</u>		PLANT ASSOC.: <u>210</u>
SOIL MAP UNIT: <u>20CD</u>		SITE INDEX: <u>61-80</u>
MMI HAZARD: <u>0</u>		UNIT VOL.: <u>299</u> MBF
LANDFORM: <u>MOUNTAIN SLOPE</u>		ACRES: VC4: <u>4</u> VC5: <u>1</u>
		VC6: <u>9</u> VC7: <u></u>
EXAM TYPE: <u>STAND EXAM</u>		UNDESIGNATED: <u></u>

## STAND/UNIT DESCRIPTION

This is a medium-stocked stand of old growth western hemlock and yellowcedar with some Sitka spruce and a little mountain hemlock and western red cedar. Advanced regeneration, mostly western hemlock, is abundant. Shrub species present in variable amounts are blueberry, menziesia, and devil's club. Red alder is stocking nearby severely disturbed sites. Adjacent stands show high amounts of blowdown around their edges. There is some mistletoe in the overstory. Snag density is high.

A Class III stream flows along the south boundary of the unit into a Class I stream, which also forms a portion of the south boundary and the west boundary. The harvest of this unit will reduce the amount of diverse forest structure available in the area and will further fragment a continuous forest travel corridor.

## INTEGRATED MANAGEMENT GOALS/OBJECTIVES

This area has been allocated to Land Use Designation IV in the current Forest Plan (TLMP 1979, as amended). The emphasis of this area is primarily on commodity, or market resources, and their use; amenity values are also provided for. Reductions in potential timber yields are made to provide for the protection of the physical and biological productivity.

This area has been allocated to the Timber Production Land Use Designation in the Proposed Revised Forest Plan (Alt. P, TLMP Draft Revision, 1991). The emphasis of this area is to maintain and promote industrial wood production. These



lands will be managed for the favorable development of the timber resource and for long-term timber production.

The objective for harvesting this unit is to provide volume for the KPC long-term timber sale or the Ketchikan Area independent timber sale program.

#### STAND GOALS

1. The desired future condition of this unit is to produce a vigorous second-growth stand of mixed species that will yield sawlog size and quality products at the end of the next rotation.
2. Protect the existing advance reproduction.
3. Promote the establishment of a significant yellowcedar component in the future stand.
4. Reduce the presence of mistletoe in the area and minimize the risk of infecting the regeneration.
5. Prevent red alder incursion to the extent practicable.
6. Protect the Class I and III streams from sedimentation and temperature increases.
7. Mitigate the loss of structural diversity for wildlife.

#### UNIT PRESCRIPTION

Goals 1,2,3,4,7. Harvest Type F will be used. Dominate and co-dominate seed trees will be retained in clumps or scattered across the unit to provide an additional seed source to enhance natural regeneration and to provide structural diversity. In this case yellowcedar trees will be retained whenever practicable. Western hemlock retained will be mistletoe-free. The unit was designed for a swing yarder with four settings.

Goals 2,5,6. Partial suspension will be required throughout the majority of the unit.

Goal 6. A 100-foot no-harvest buffer will be established along the Class I stream.

Goal 6. The south unit boundary will be located on the topographic break above the Class III stream.

Goal 7. The unit boundaries are at least 500 feet from the clearcut unit to the east.

## STAND DEVELOPMENT

This unit will likely meet NFMA third year stocking guidelines and five year certification standards for natural regeneration. The District Silviculturist must certify that the unit is adequately stocked within 5 years of harvest completion. Stocking will come from advance regeneration and seeding from adjacent stands. Western hemlock seedlings are likely to predominate, but some Sitka spruce, western red cedar, and yellowcedar are expected as well.

Review the stand for precommercial thinning opportunities about 20 years after stand establishment. Precommercial thinning will be conducted at approximately 25 years of age to reduce stocking density and to provide higher quality wood. Spacing will be about 12' X 12' (300 trees per acre) using equilateral spacing to achieve the stocking objective. Western hemlock will be thinned heavier than other species to provide a more equal mix and diversity of tree species.

Review the stand for commercial thinning treatment opportunities about 60 years after stand establishment.

The unit is expected to achieve a closed canopy stand of hemlock and minor amounts of Sitka spruce and yellowcedar upon the completion of the rotation at approximately 120 years. Stand structural diversity will be provided through the retention of merchantable and unmerchantable trees and snags along the unit boundaries.

PREPARED BY: L. James Brady DATE: 8/31/95

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



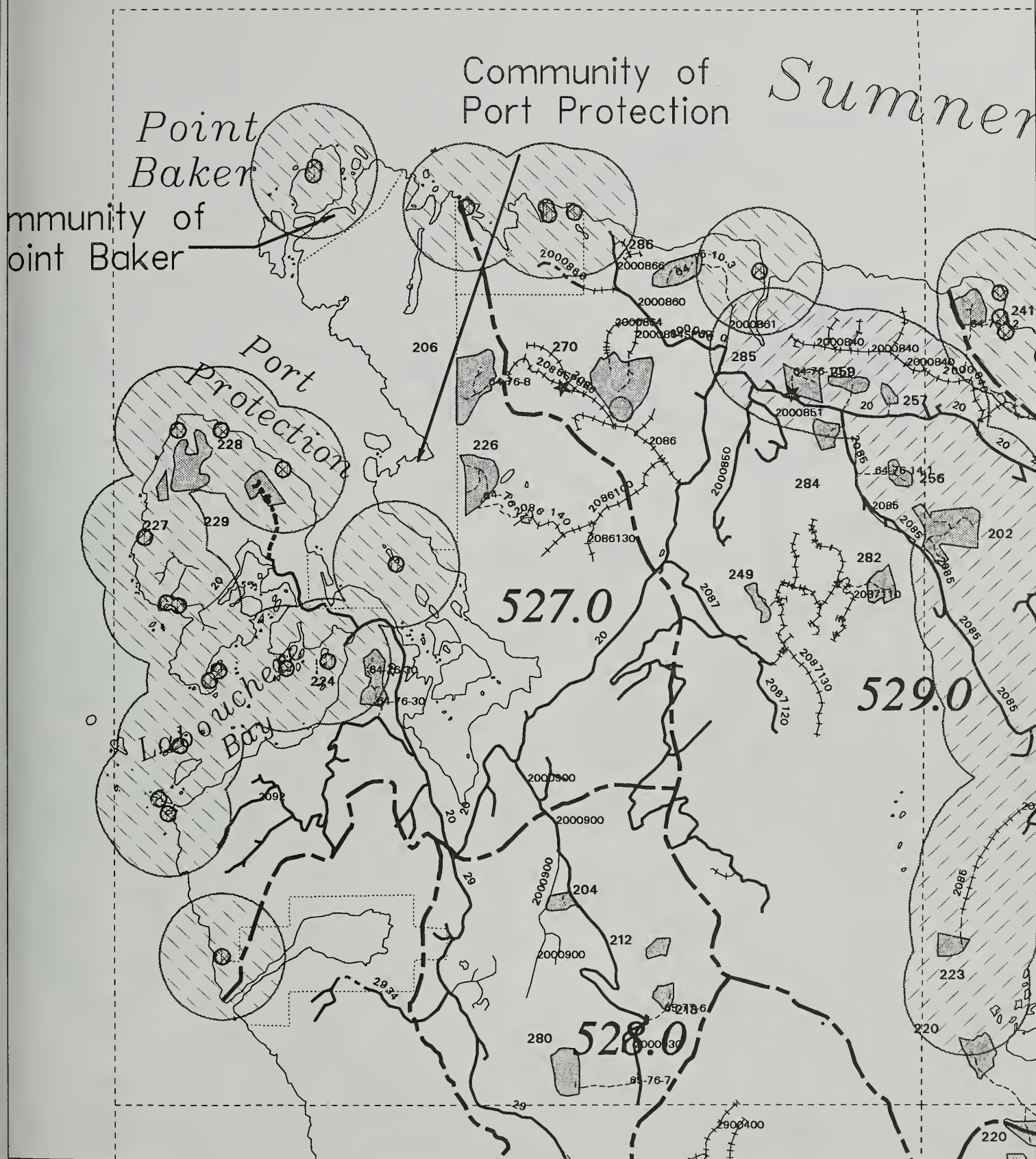


# **Appendix H**

## **Road Cards**

H. J. Brinkman

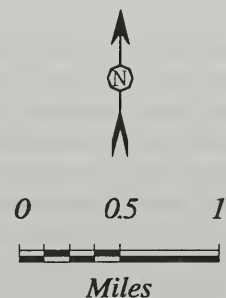
1910-1911



### Quad B5SW

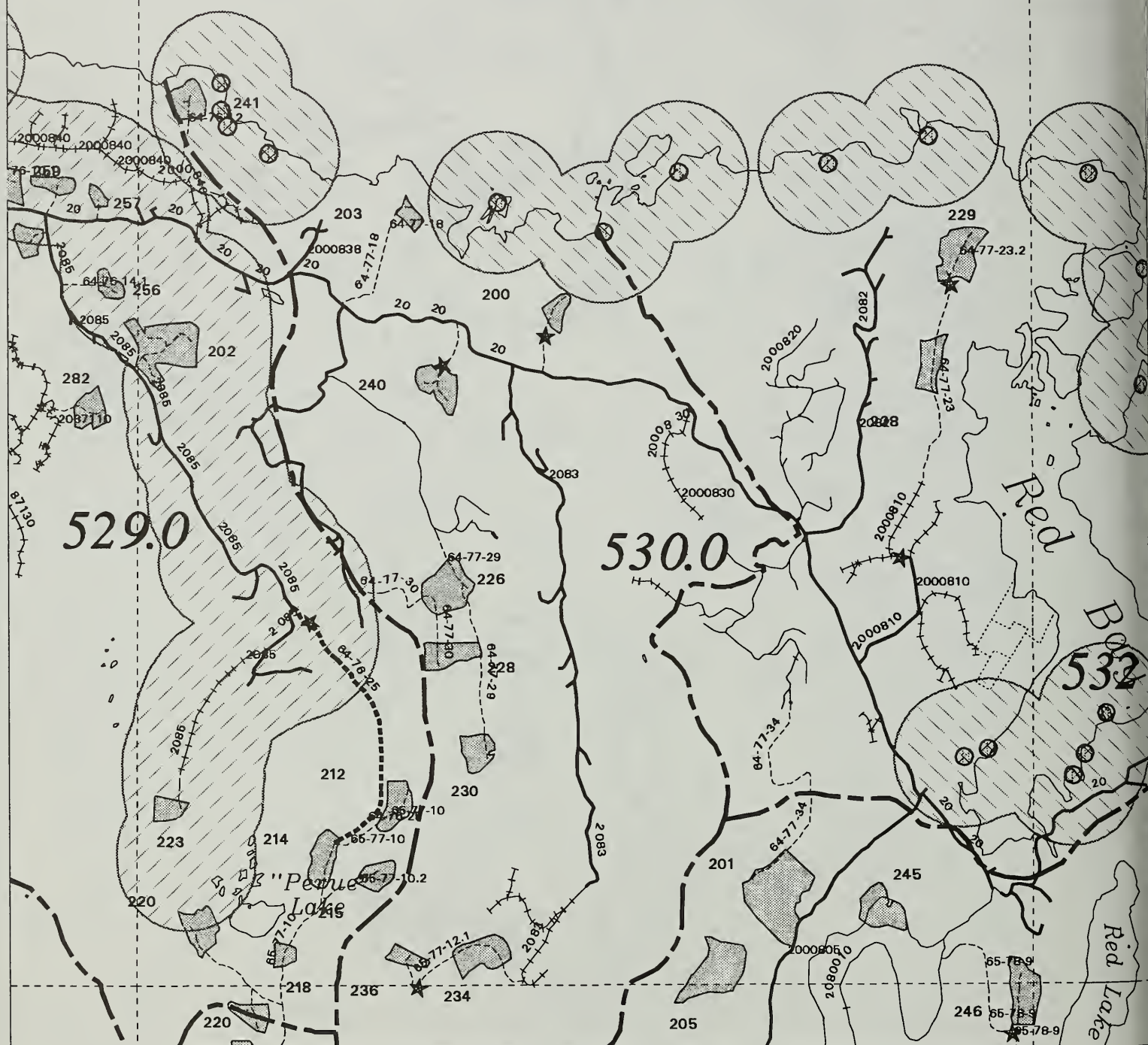
- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- Proposed Roads - Proposed for Closure
- Recon Roads - To Remain Open
- Recon Roads - Proposed for Closure
- Roads on Private and State Land
- ... Calder Tie Road
- ... Private Land

- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary





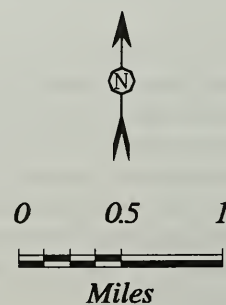
Summer Strait

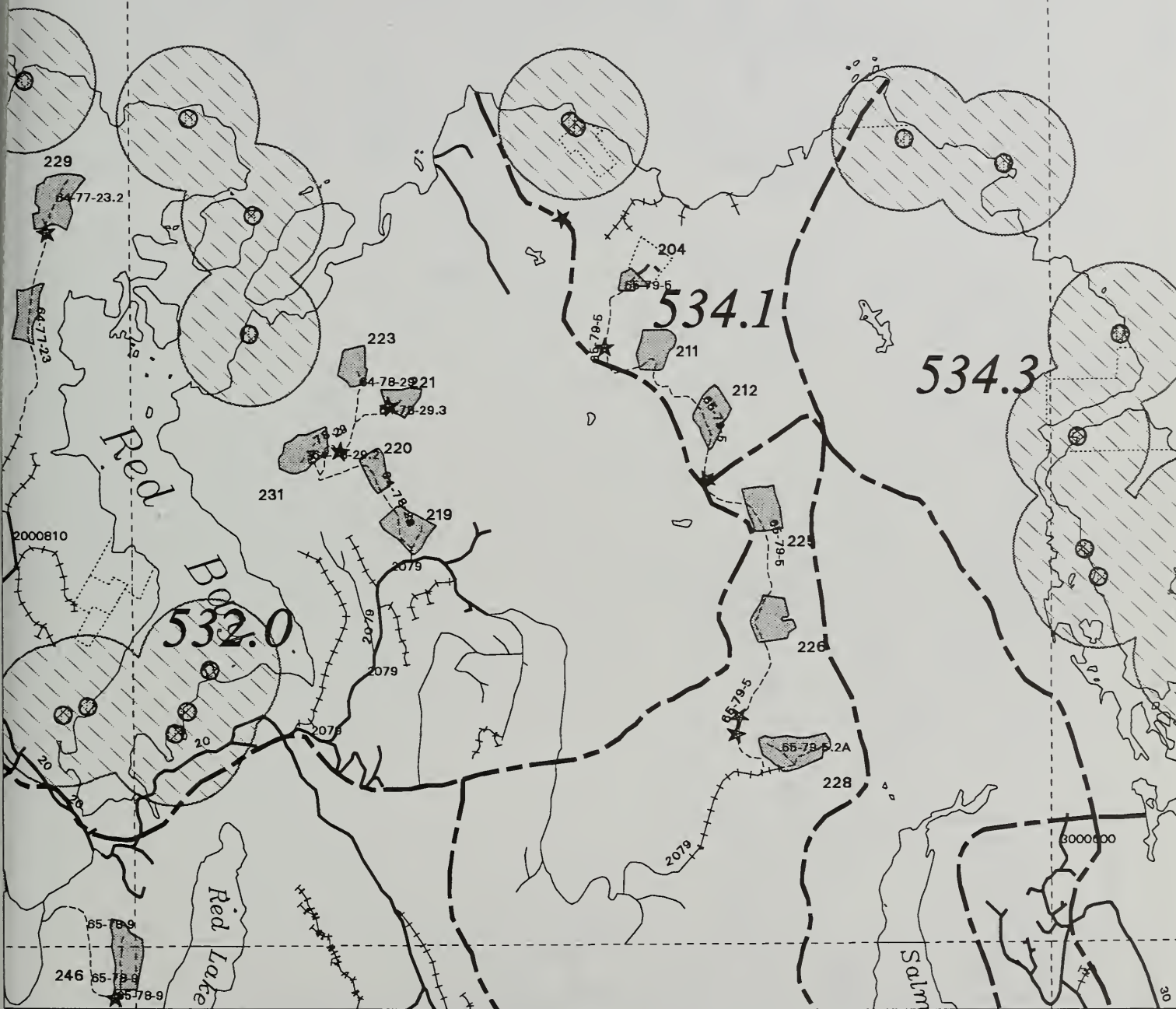


# Quad B5SE

- Existing Roads - Currently Open
- Existing Roads - Proposed for Closure
- Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- Proposed Roads - Proposed for Closure
- Recon Roads - To Remain Open
- Recon Roads - Proposed for Closure
- Roads on Private and State Land
- Calder Tie Road
- Private Land

- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- Stream Crossings
- VCU Boundary





### Quad B4SW

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- Proposed Roads - Proposed for Closure
- Recon Roads - To Remain Open
- Recon Roads - Proposed for Closure
- Roads on Private and State Land
- ... Calder Tie Road
- ... Private Land

- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary

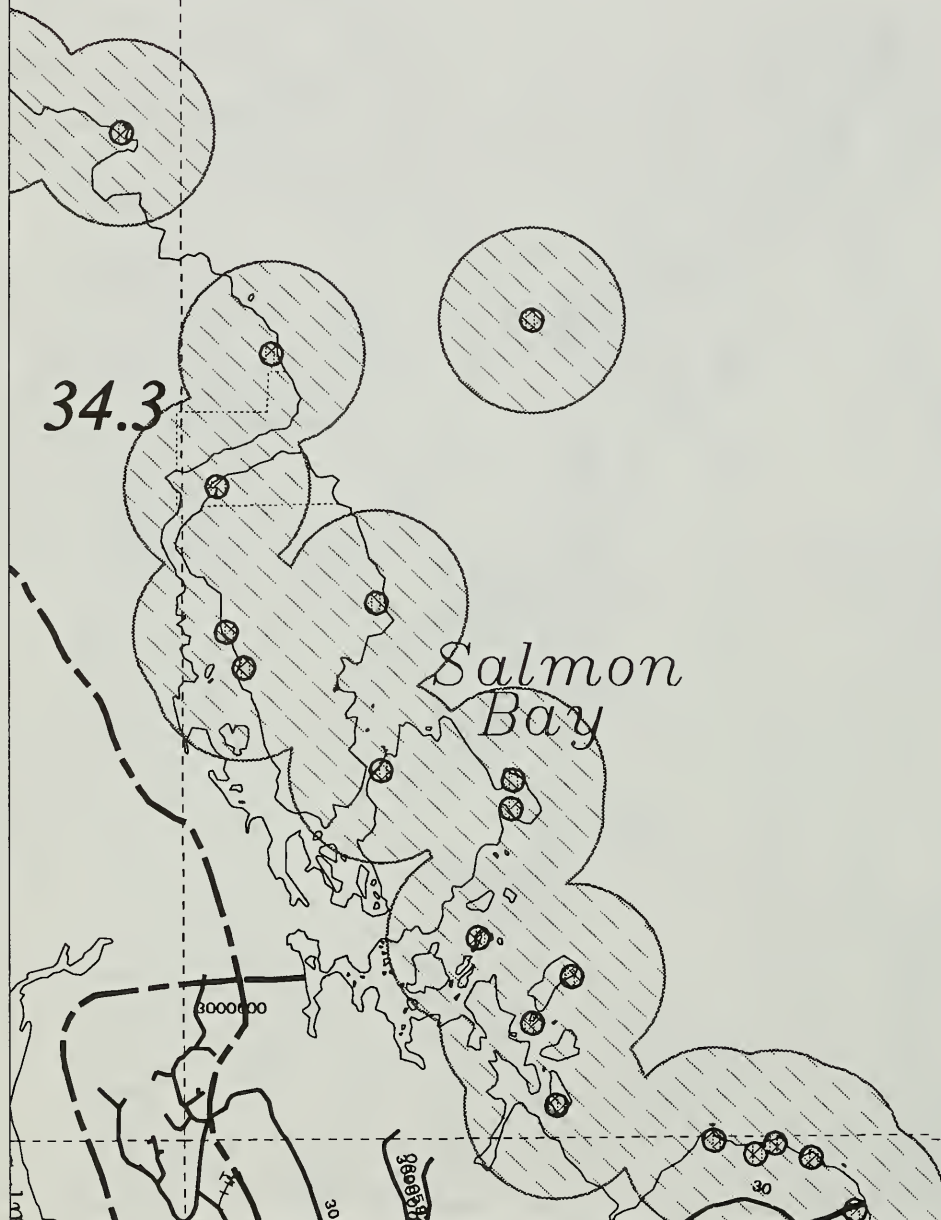


0 0.5 1



















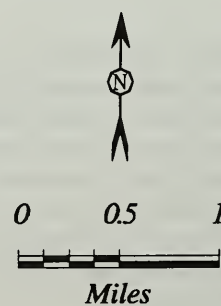
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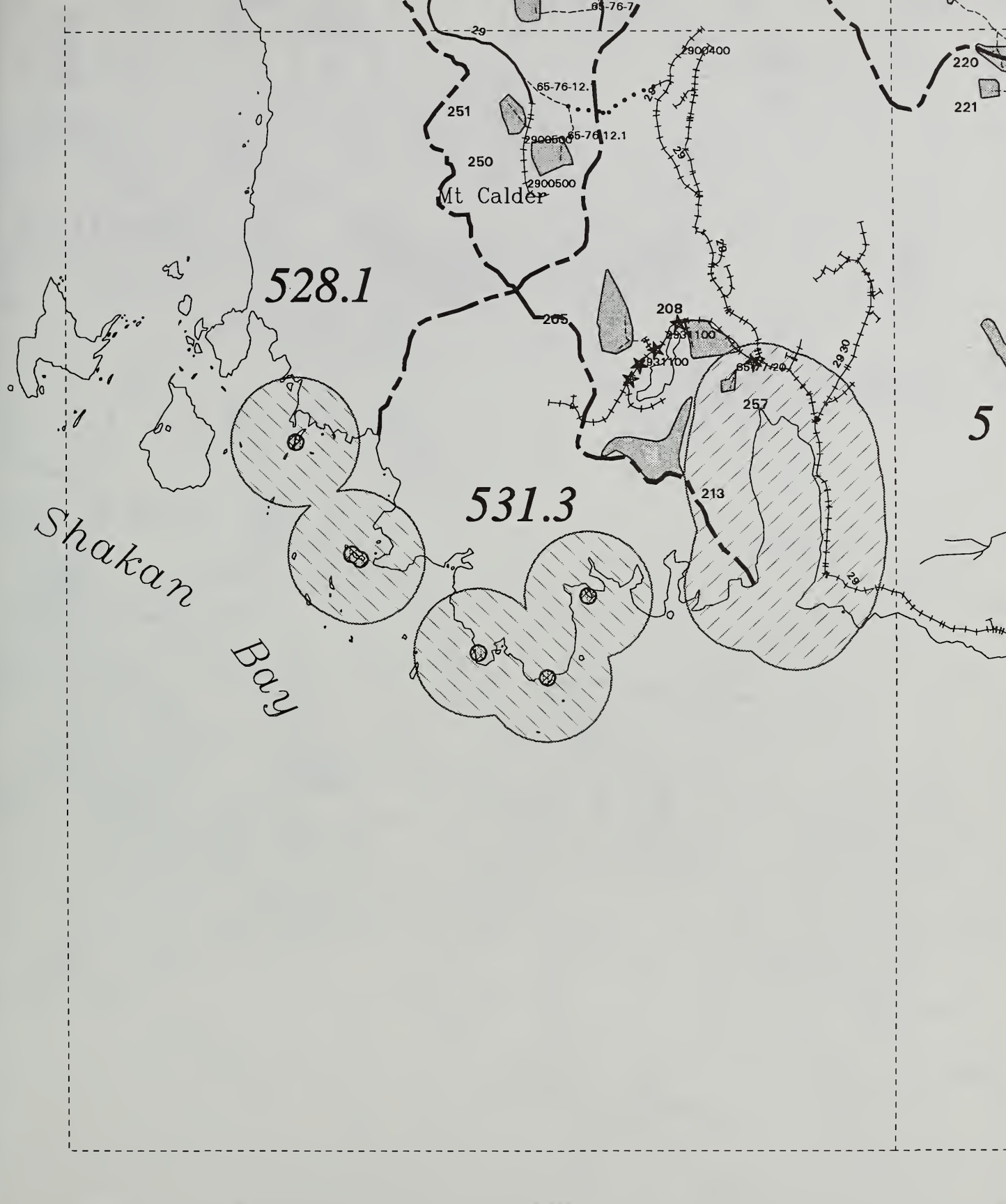


## Quad B4SE

- |   |                                       |   |                                   |
|---|---------------------------------------|---|-----------------------------------|
|  | Existing Roads - Currently Open       |  | 1/2 Mile Eagle Disturbance Buffer |
|  | Existing Roads - Proposed for Closure |  | 330' Eagle Nest Buffer            |
|  | Existing Roads - Currently Closed     |  | Swan Wintering Areas              |
|  | Proposed Roads - To Remain Open       |  | VC Goose Areas                    |
|  | Proposed Roads - Proposed for Closure |  | Stream Crossings                  |
|  | Recon Roads - To Remain Open          |  | VCU Boundary                      |
|  | Recon Roads - Proposed for Closure    |   |                                   |
|  | Roads on Private and State Land       |   |                                   |
|  | Calder Tie Road                       |   |                                   |
|  | Private Land                          |   |                                   |



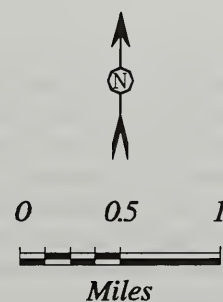


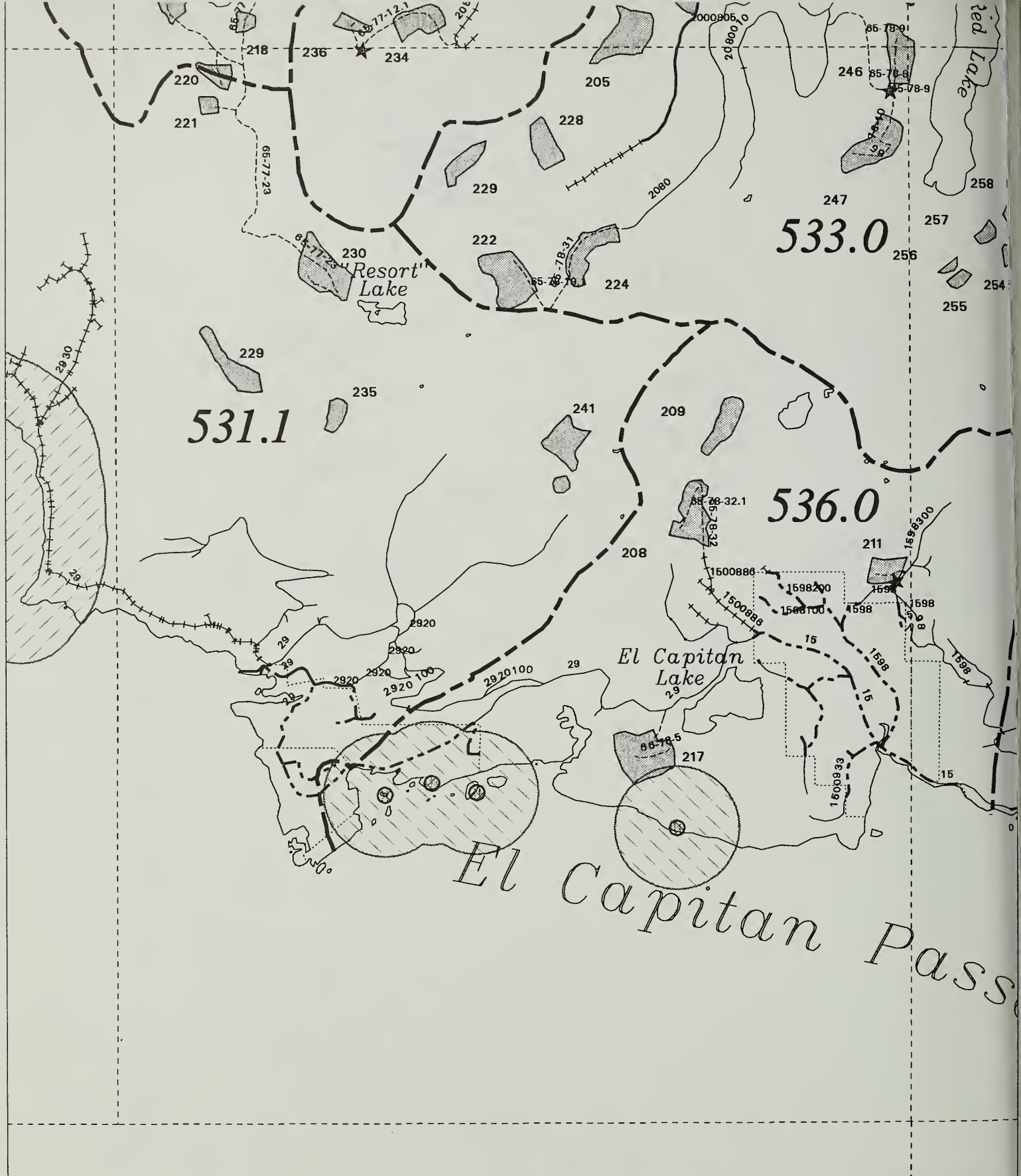


### Quad A5NW

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- +++ Existing Roads - Currently Closed
- .... Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- - - Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- - - Roads on Private and State Land
- .... Calder Tie Road
- ..... Private Land

- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary

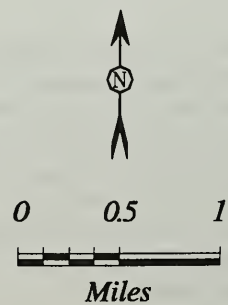




### Quad A5NE

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- +++ Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- Roads on Private and State Land
- ..... Calder Tie Road
- ..... Private Land

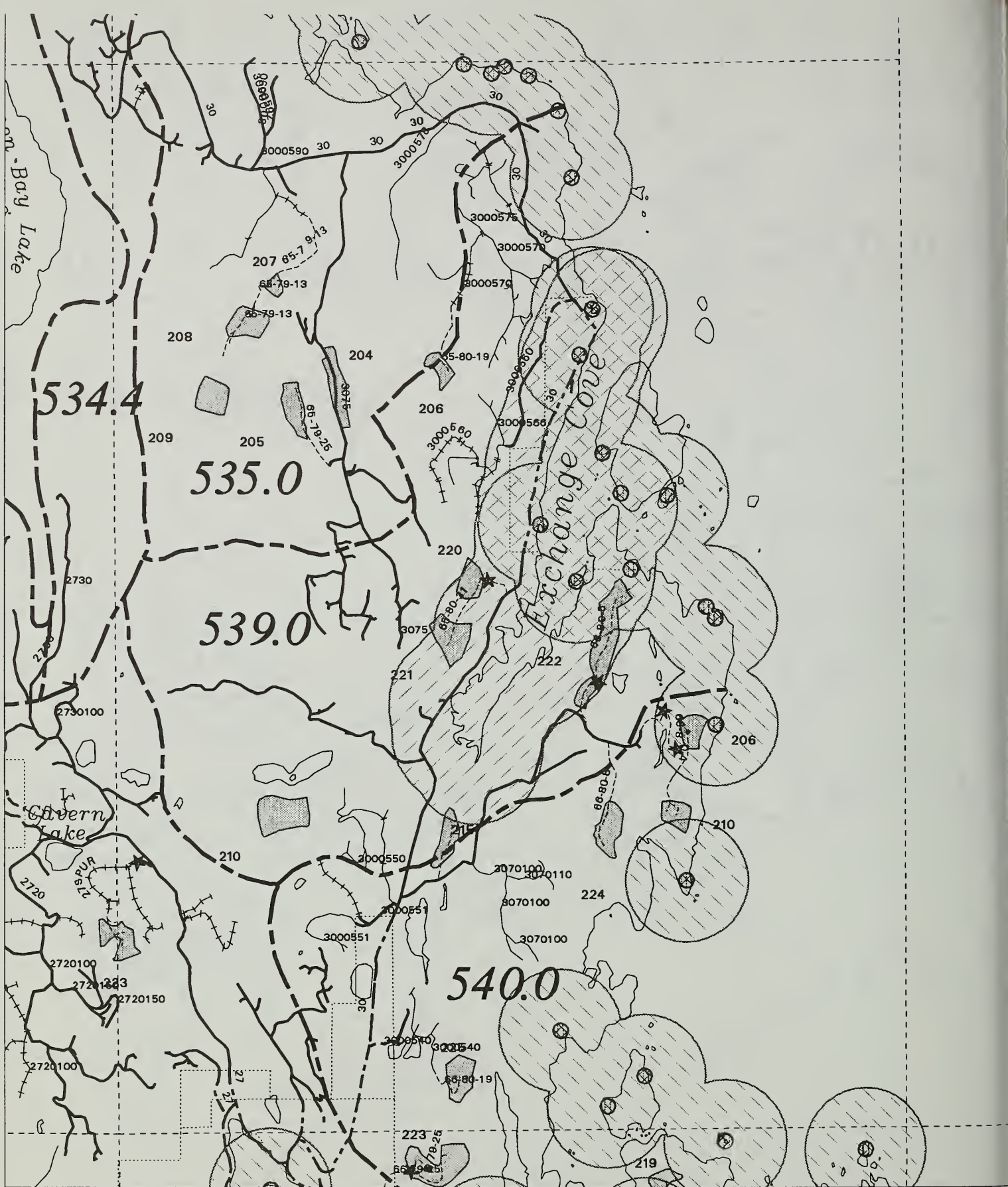
- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary







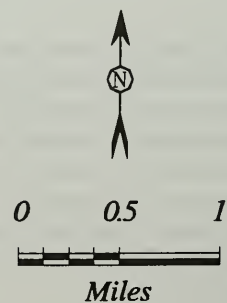


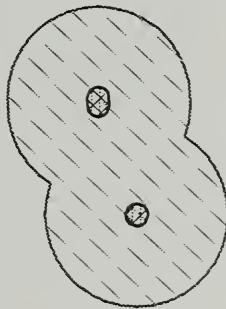
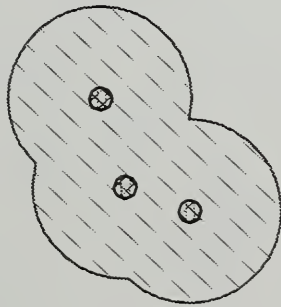
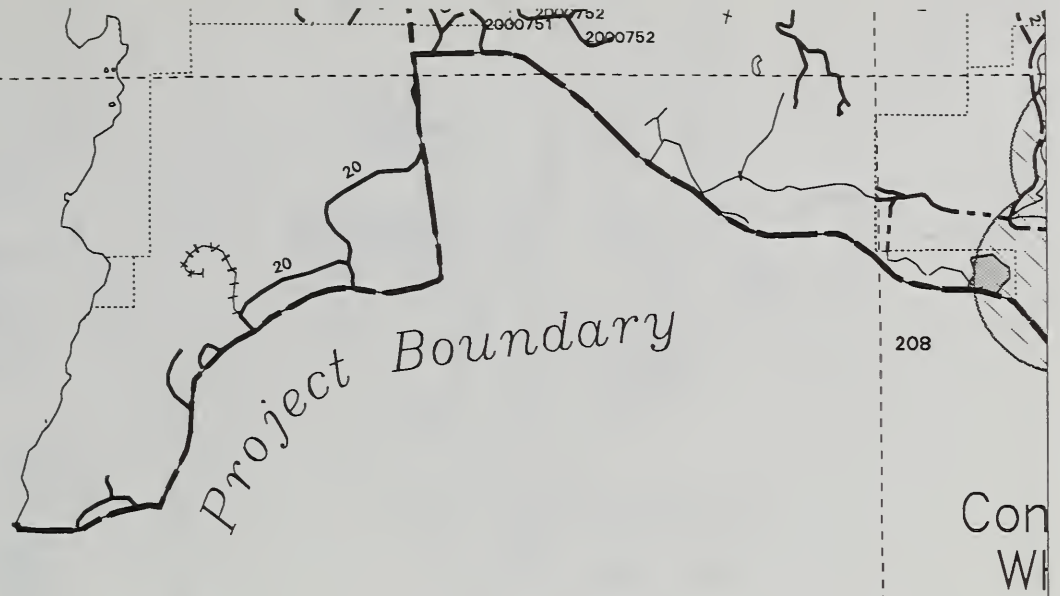


### Quad A4NE

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- +++ Existing Roads - Currently Closed
- .... Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- - - Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- - - Roads on Private and State Land
- ..... Calder Tie Road
- ..... Private Land





- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary

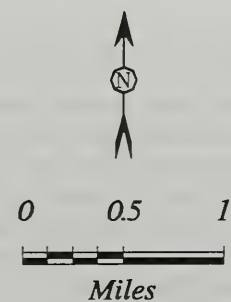




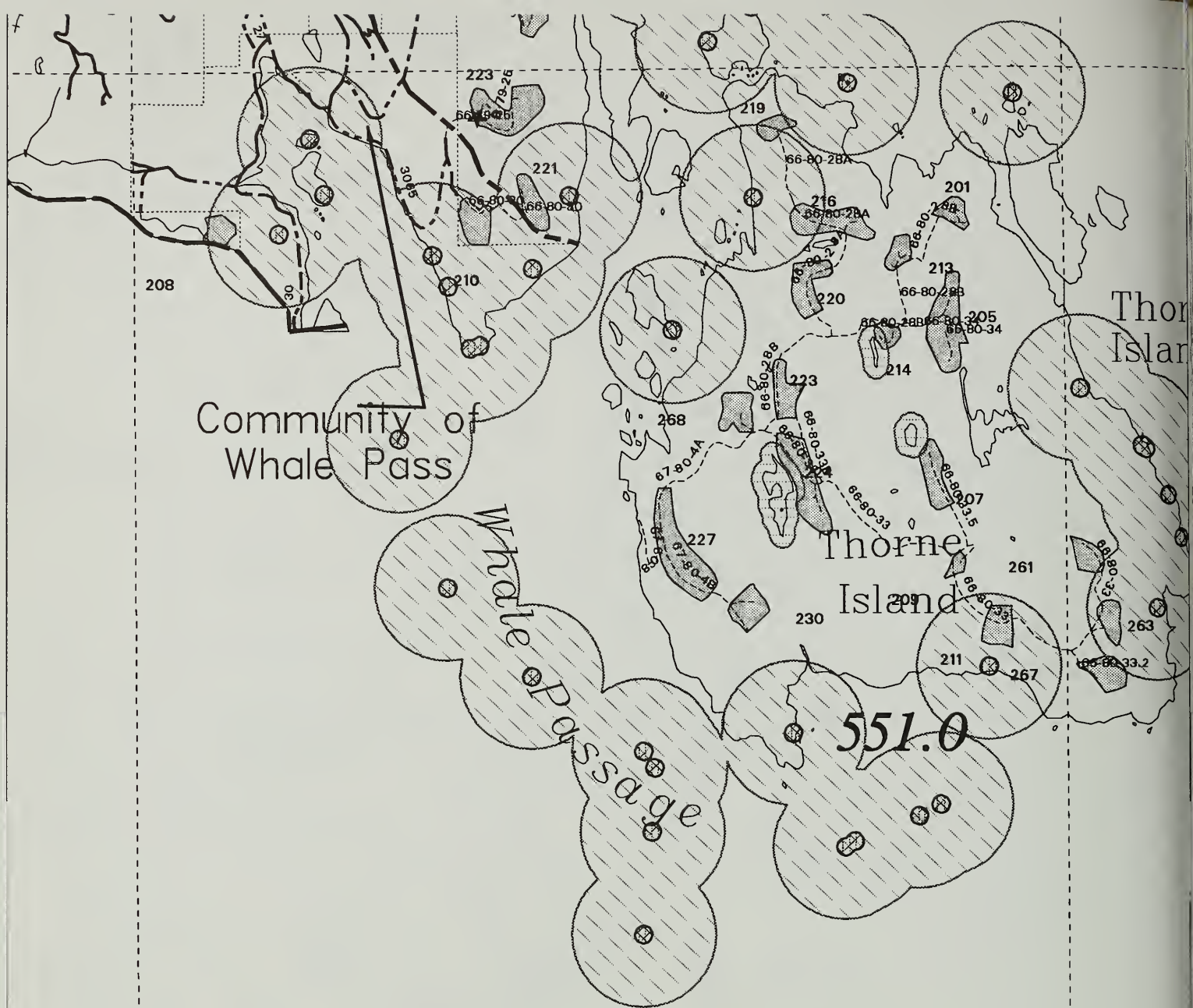
## Quad A4SW

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- - - Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- - - Roads on Private and State Land
- Calder Tie Road
- Private Land

-  1/2 Mile Eagle Disturbance Buffer
-  330' Eagle Nest Buffer
-  Swan Wintering Areas
-  VC Goose Areas
- ★ Stream Crossings
- VCU Boundary



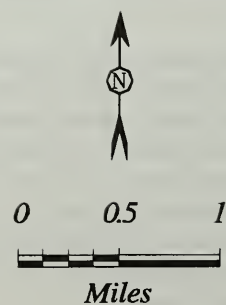




## Quad A4SE

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- +++ Existing Roads - Currently Closed
- Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- Roads on Private and State Land
- ..... Calder Tie Road
- ..... Private Land

- 1/2 Mile Eagle Disturbance Buffer
- 330' Eagle Nest Buffer
- Swan Wintering Areas
- VC Goose Areas
- ★ Stream Crossings
- VCU Boundary







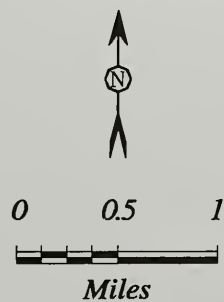


# Thorne Island

## Quad A3SW

- Existing Roads - Currently Open
- - - Existing Roads - Proposed for Closure
- +++ Existing Roads - Currently Closed
- .... Proposed Roads - To Remain Open
- - - Proposed Roads - Proposed for Closure
- - Recon Roads - To Remain Open
- - - Recon Roads - Proposed for Closure
- - - Roads on Private and State Land
- .... Calder Tie Road
- ..... Private Land

-  1/2 Mile Eagle Disturbance Buffer
-  330' Eagle Nest Buffer
-  Swan Wintering Areas
-  VC Goose Areas
- ★ Stream Crossings
- VCU Boundary





**Road Card Notes**

1. Road lengths are based on GIS information. Actual road lengths may differ due to local topographic conditions.
2. All proposed roads will be maintained at Maintenance Level 2 during the sale. Post-sale Road Maintenance Levels are noted on the road cards, with the exception of temporary roads. All temporary roads will be closed upon completion of harvest.
3. Mitigation measures have been noted for proposed roads located on high vulnerability karst. If selected in the Record of Decision, these roads would be constructed as specified temporary roads.





# Lab Bay Timber Sale EIS

## Phase I Road Cards

**ROAD NUMBER:** 64-75-24 and A, B, and C

**VCU:** 527

**GIS LENGTH:** Combined = 0.78 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** C

**MAINTENANCE LEVEL:** 2

**ACCESS STRATEGY:** Encourage

**ACCESS STRATEGY DETERMINATION:** (1) Maintain access for recreational opportunities.

**UNITS ACCESSED:** 527-229 and Helicopter Landing for 527-227 and 527-228

**STREAM CROSSINGS:** 2 small Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 0.6 miles of new road construction to access unit 527-229, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. In addition, the heliports and helicopter logging flight corridors for unit 527-227 must maintain at least a 1/4 mile distance from the nest during this time period. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** Road crosses high karst vulnerability area. For protection of karst resources apply mitigation measure Kr3.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Road accesses timber south of unit 527-229, could be extended to access timber to the NE, and access future helicopter logging to NW.

Road Nodes: 201 - 203-205  
A) 202 - 206  
B) 203 - 207  
C) 203 - 208

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 64-76-08, 08.1, and 08.1A

**VCU:** 527

**GIS LENGTH:** Combined = 0.65 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Domestic water supply for Port Protection, (2) High quality wildlife habitat, (3) Subsistence use concerns, and (4) Karst resource concerns.

**UNITS ACCESSED:** 527-206

**STREAM CROSSINGS:** Reconstructed segment of Road spur off of 2086 will require one Class III crossing that will receive timing restrictions due to proximity to Class I. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measures Kr1, Kr2. Steep cross slopes at STA R4+25 to R7+40 Road 64-76-08 15% favorable grade STA R3+40 to R8+10 and R11+50 Road 64-76-08.1 15% favorable grade STA 6+50 to 7+50 Road 64-76-08.1A.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes:     703 - 740  
                     740 - 742  
                     741 - 743 - 745 - 746  
                     745 - 747  
                     743 - 744



# **Lab Bay Timber Sale EIS**

## **Phase I Road Cards**

**ROAD NUMBER:** 64-76-09.1, 64-76-09.2, and 09.2A

**VCU:** 529

**GIS LENGTH:** Combined = 0.57 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-270

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** None

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes:     906 - 907  
                     905 - 908 - 909  
                     908 - 910

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-10

**VCU:** 529

**GIS LENGTH:** 0.18 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-284

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Small amount of muskeg crossing and marsh crossing. Location minimizes muskeg crossing.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 1101 - 1110

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-10.1

**VCU:** 529

**GIS LENGTH:** 0.36 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-285

**STREAM CROSSINGS:** One Class I stream crossing required. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17. Final layout should include review of possible alternate access from SE corner, avoiding Class I stream crossing.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Crosses Class I stream with 10' fill and large culvert. Design drainage such that sediment cannot enter stream from road. Crossing is perpendicular to stream channel. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**RECOMMENDED CHANGE:** Access unit from the SE, thereby eliminating the Class I stream crossing.

**Road Nodes:** 10 - 1001-1002



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-10.3

**VCU:** 529

**GIS LENGTH:** 1.03 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Subsistence use concerns, and (3) Karst resource concerns.

**UNITS ACCESSED:** 529-286

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** 0.9 miles of new road construction to access units 529-286, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. 0.3 of these miles are outside of the 1/2 mile buffer, but dependent on prior construction within the buffer. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measure Kr4. No stream crossings. No blasting noted or expected. Road designed for swing yarding from multiple locations from the road trying to maintain 1000' external yarding distances for each setting.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Several more settings accessed from road.

**Road Nodes:** 902 - 921-923

# **Lab Bay Timber Sale EIS**

## **Phase I Road Cards**

**ROAD NUMBER:** 64-76-11

**VCU:** 529

**GIS LENGTH:** 0.23 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat and (2) Subsistence use concerns.

**UNITS ACCESSED:** 529-259

**STREAM CROSSINGS:** One stream crossing requiring a 15 foot fill.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Location crosses 100 feet of muskeg.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 11 - 1111

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-11.1

**VCU:** 529

**GIS LENGTH:** 0.14 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-257

**STREAM CROSSINGS:** None after relocating the road 300 feet to the west for the first 2/3 of road.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Road location flagged crosses a small Class I stream twice. The beginning of the road should be relocated about 300 feet to the west to avoid crossing this stream. Design such that sediment cannot enter stream.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 12 - 1201



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-12

**VCU:** 529, 530

**GIS LENGTH:** 0.61 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat and (2) Subsistence use concerns.

**UNITS ACCESSED:** 530-241

**STREAM CROSSINGS:** One small Class III stream crossing requiring small CMP and minimal road fill to cross. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 0.7 miles of new road construction to access unit 530-241, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** Road crosses low or moderate karst vulnerability area. For protection of karst resources apply mitigation measure Kr7. The first 1,500 feet of the road crosses karst type topography. 200 feet of the road was located in the bottom of a solution channel. Other routes were less desirable

**FUTURE TIMBER ACCESS POSSIBILITIES:** The road is located through timber from the beginning to the unit 530-241 south boundary.

Road Nodes:     1401 - 1404  
                     1403 - 1405

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 64-76-14, 14A, and 14B

**VCU:** 529

**GIS LENGTH:** 0.92 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Wildlife resource concerns over road density.

**UNITS ACCESSED:** 529-202

**STREAM CROSSINGS:** One Class III requiring little fill and only a small CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Road crosses one Class III stream.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Could be extended to access patch of timber to the SE of unit 529-202.

Road Nodes:	1103 - 1130-1133	64-76-14
	1131 - 1134	64-76-14A
	1130 - 1135	64-78-14B

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-14.1

**VCU:** 529

**GIS LENGTH:** 0.49 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-256

**STREAM CROSSINGS:** One Class III stream which drains a muskeg, small CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Road location crosses some muskeg. No other concerns.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 1102 - 1120-1121



## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 64-76-17 and 17.1

**VCU:** 527

**GIS LENGTH:** Combined = 1.34 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Domestic water supply for Port Protection, (2) High quality wildlife habitat, (3) Subsistence use concerns, and (4) Karst resource concerns.

**UNITS ACCESSED:** 527-226

**STREAM CROSSINGS:** 3 stream crossings: 2 Class III stream with small CMP and one Class II stream requiring  $\pm 36$ " CMP with 15 feet fill to cross. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measures Kr1, Kr2, Kr3. 1,000 feet of construction through 45 - 90 percent sideslopes requiring rock blasting and endhauling. There are three 60' radius switchback curves. Crosses a Class II stream with a 100' TTRA buffer.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Goes through some timber between existing clearcut unit and the Class II stream crossing. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

Road Nodes: 706 - 730 - 731 - 733  
731 - 732

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-22

**VCU:** 529

**GIS LENGTH:** 0.24 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 529-249

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Maximum 12 percent adverse hauling. Location avoids any stream crossings.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 605 - 620 - 621

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-23

**VCU:** 529

**GIS LENGTH:** 0.40 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Wildlife resource concerns over road density.

**UNITS ACCESSED:** 529-282

**STREAM CROSSINGS:** 6 Class III stream crossings requiring less than 48" CMP. One of those streams requires 15 feet of fill to cross. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses 6 small streams, otherwise normal construction. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Extendable to the east to future unit, located through timber to west of unit 529-282 also.

**Road Nodes:** 607 - 630 - 631



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-25 (Alder Creek to Perue Lake)

**VCU:** 529

**GIS LENGTH:** 2.03 miles

**ROAD CLASS:** Collector

**SERVICE LEVEL:** C

**MAINTENANCE LEVEL:** 2

**ACCESS STRATEGY:** Encourage

**ACCESS STRATEGY DETERMINATION:** Recreational opportunities.

**UNITS ACCESSED:** 529-212, 529-214, 529-215, 529-218, 529-221, 529-230.

**STREAM CROSSINGS:** One Class I bridge crossing (Alder Creek) and 4 unstable Class III identified on photos. Also expect several small Class III crossings.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Alder Creek. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Bridge crossing and 4 unstable V-notch stream crossing. Road crosses high MMI soils on >55% cross slopes. Road location was not field verified.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Road is located through timber for the entire length. Alternate route to consider begins from unit 529-223 and would be located around the south side of Perue Lake, joining current road system near Unit 529-218. The disadvantage of this alternate route is that only a small portion of the road accesses timber along the way. The majority of the road is located through volume class 3 or less timber.

**Road Nodes:** 607 - 630 - 631

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-76-30 and 30A

**VCU:** 527

**GIS LENGTH:** Combined = 0.64 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife movement corridor and (2) Karst resource concerns.

**UNITS ACCESSED:** 527-224

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** 0.5 miles of new road construction to access unit 527-224, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measure Kr2. Some blasting required across karst topography. Placed road to minimize site disturbance.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Can be extended to access timber to the NW and E of unit 527-224.

**Road Nodes:** 301-306

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-17

**VCU:** 530

**GIS LENGTH:** 0.59 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 530-200

**STREAM CROSSINGS:** One Class I stream crossing; apply timing restrictions. Seven Class III streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Bridge at STA 13+90, this is a V-notch 20' deep and 30' wide and is a Class I stream. There are numerous muskeg crossings.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is a strip of timber SE of unit 530-253 between the creek and an existing clearcut that could be accessed from spur 64-77-17.1. There is timber west of unit 530-200 that could be accessed from road 64-77-17.

Road Nodes:     18 - 1801-1803  
                     1802 - 1804



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-18 and 18.3

**VCU:** 530

**GIS LENGTH:** Local = 0.99 miles; Temporary = 0.15 miles

**ROAD CLASS:** 64-77-18 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality deer winter range and (2) Subsistence use concerns.

**ROAD CLASS:** 64-77-18.3 Temporary

**UNITS ACCESSED:** 530-203

**STREAM CROSSINGS:** 64-77-18 crosses 3 Class III streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road located to avoid Class I stream crossing.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is poorly stocked timber along road 64-77-18 and there is timber west of unit 530-203 that could be accessed from this road system.

**Road Nodes:** 15 - 1520-1523  
1522 - 1525

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-19 and 19A

**VCU:** 530

**GIS LENGTH:** Local = 0.63 miles; Temporary = 0.13 miles

**ROAD CLASS:** 64-77-19 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Wildlife resource concerns over road density.

**ROAD CLASS:** 64-77-19A Temporary

**UNITS ACCESSED:** 530-240

**STREAM CROSSINGS:** One Class I and one Class III streams are crossed. The CMP across the Class I stream requires fish passage to be possible and seasonal constraints on placement. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses muskeg with deep, soft soils. Crosses a Class I stream with 100' TTRA buffer in the area of a beaver dam. Crossing is perpendicular to stream channel. Needs proper drainage to prevent sediment from entering stream.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes:     16 - 1601-1603  
                    1602 - 1604

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-22

**VCU:** 529

**GIS LENGTH:** 0.32 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY:** (1) Entry into previously unroaded area and (2) High quality wildlife habitat.

**UNITS ACCESSED:** 529-223

**STREAM CROSSINGS:** 4 Class III live streams and one dry stream bed is crossed. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** V-notch crossing requiring a >48" CMP and a 8' roadfill over a 25% channel is of low concern. 15 percent road grade over V-notch will require good road drainage above V-notch so that sediment from road does not enter stream.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses timber to north of unit 529-223.

**Road Nodes:** 1106 -1161-1162



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-23 and 23.2

**VCU:** 532

**GIS LENGTH:** Local = 1.60 miles; Temporary = 0.36 miles

**ROAD CLASS:** 64-77-23 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife resource concerns over road density and (2) Karst resource concerns.

**ROAD CLASS:** 64-77-23.2 Temporary

**UNITS ACCESSED:** 532-228 and 532-229

**STREAM CROSSINGS:** There are 5 stream crossings, one is a Class IIA stream and one was dry. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** 64-77-23: There is one Class IIA stream crossing, no other concerns noted. 64-77-23.2: There are small sink holes along the route that will require investigation. Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measures Kr3, Kr4, Kr5.

**FUTURE TIMBER ACCESS POSSIBILITIES:** The road system passes through timber its entire route.

Road Nodes:     2001 - 2005  
                     2004 - 2006

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 64-77-29 and 29.1 spur

**VCU:** 530

**GIS LENGTH:** Local = 1.70 miles; Temporary = 0.05 miles

**ROAD CLASS:** 64-77-29 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Wildlife resource concerns over road density and (3) Numerous stream crossings.

**ROAD CLASS:** 64-77-29.1 Temporary

**UNITS ACCESSED:** 530-226, 228, and 230

**STREAM CROSSINGS:** 12 Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road location crosses 12 Class III streams which are tributaries to Buster Creek. Road drainage needs to be properly designed to prevent sediment off road from entering streams. Crosses high and very high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Will access remaining timber along bottom 1/2 of ridge above road.

Road Nodes: 1505 - 1551-1556  
1552 - 1557

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-30

**VCU:** 530

**GIS LENGTH:** 1.28 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Wildlife resource concerns over road density, and (3) Numerous stream crossings.

**UNITS ACCESSED:** 530-226 and 530-228

**STREAM CROSSINGS:** 12 Class III stream crossings of which 4 require greater than a 8 foot road fill to cross. None require >48" culverts. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses timbered muskeg for the first 4700 feet. 100 feet of rock blasting required. One stream crossing requires a 18 foot road fill to cross. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses timber along the upper slope between units 530-226 and 228 and could be extended to access a setting south of 530-228.

**Road Nodes:** 1504 - 1541-1545



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 64-77-34

**VCU:** 530, 533

**GIS LENGTH:** 1.89 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife resource concerns due to road densities and adjacent past harvest, (2) Numerous stream crossings, and (3) Crosses high MMI soils.

**UNITS ACCESSED:** 533-201

**STREAM CROSSINGS:** 12 small Class III stream crossing. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Expensive road construction on segments of road requiring rock blasting for a total of 600 feet. another 1800 feet of construction on slopes over 55 percent requiring end-hauling. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** 30-40 MMBF timber in Little Creek drainage and upper west Big Creek drainage. Several units.

**Road Nodes:** 1902 - 1904

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 64-78-29, 29.1, 29.2, & 29.3

**VCU:** 532

**GIS LENGTH:** Local = 2.13 miles; Temporary = 0.82 miles

**ROAD CLASS:** 64-78-29 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Subsistence use concerns, (3) Limited wildlife escape cover, (4) Karst resource concerns, and (5) Numerous stream crossings.

**ROAD CLASS:** 29.1, 29.2, & 29.3 Temporary

**UNITS ACCESSED:** 532-219, 532-220, 532-221, 532-223, 532-231

**STREAM CROSSINGS:** 19 Class III and 1 Class IIa stream crossings (64-78-29); and on 64-78-29.3 accessing 532-221, road crosses a Class I stream (SW). For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses low or moderate vulnerability karst area. For protection of karst resources apply mitigation measure Kr7. The only rock sources noted were at the beginning and near the end. The road passes near and across several muskeg areas. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There are several units that can be accessed from this road system. The road passes through some and others can be reached by extending both the main and side spurs. This timber on this area is poorly stocked with muskeg areas.

Road Nodes:     2401 - 2485-2493  
                     2485 - 2494  
                     2489 - 2495-2496  
                     2491 - 2497

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-76-07

**VCU:** 528

**GIS LENGTH:** 0.63 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife resource concerns over road density, (2) Karst resource concerns, and (3) Numerous stream crossings.

**UNITS ACCESSED:** 528-280

**STREAM CROSSINGS:** 8 stream crossings, all Class III, one requires large CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCES CONCERNS:** Proposed road crosses high vulnerability karst area through previous harvest area. Proposed road was located to minimize distance on limestone geology, avoid significant karst features, and provide mitigation to prevent channeling of road drainage into karst features. For protection of karst features apply mitigation measure Kr3. Crosses timbered muskeg for 1870 feet. Cross 6 V-notches requiring over 10 feet of fill, but simple crossings. Flagged road needs extended 300 feet to N for a landing. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Extendable to south to access large quantity of timber.

**Road Nodes:** 505 - 509 - 510



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-76-12.1

**VCU:** 528

**GIS LENGTH:** 0.88 Miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Located within large, contiguous block of old growth and (2) Wildlife resource concerns over road density.

**UNITS ACCESSED:** 528-250

**STREAM CROSSINGS:** 7 Class III stream crossings with one requiring a >48 inch CMP.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** No special concerns.

**FUTURE TIMBER ACCESS POSSIBILITIES:** One additional setting South of Unit 528-250.

**ROAD NODES:** 405, 411-412

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-76-13

**VCU:** 528

**GIS LENGTH:** 0.25 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Located within a large, contiguous block of old growth, and (3) Wildlife resource concerns over road density.

**UNITS ACCESSED:** 528-251

**STREAM CROSSINGS:** 1 Class IIB crossing at reconstruction, 2 Class III crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** This road should be easy to construct. The road was located at the bottom of the unit requiring downhill logging due to the steep sideslopes at the top of the unit. There is a switchback at the beginning but construction should be simple. A bridge & culvert replacement will be required on the existing Road. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** This road can be extended to the NW to pick up several more units.

**ROAD NODES:** 402 - 404

**Lab Bay Timber Sale EIS  
Phase I Road Cards**

**ROAD NUMBER:** 65-76-32

**VCU:** 528

**GIS LENGTH:** 0.13 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 528-204

**STREAM CROSSINGS:** No stream crossings.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** No concerns.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 503 - 506



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-06

**VCU:** 528

**GIS LENGTH:** 0.31 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Wildlife resource concerns over road density, and (3) karst resource concerns.

**UNITS ACCESSED:** 528-213

**STREAM CROSSINGS:** 4 dry stream crossings, one requires large CMP. 2 require full bench construction to cross.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measures Kr2, Kr3, Kr4. Crosses sideslopes in excess of 55 percent 850 feet. Expensive construction requiring blasting along 1300 feet.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 504 - 507 - 508

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-10

**VCU:** 529

**GIS LENGTH:** 1.90 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Previously unroaded, unentered area, (2) Wildlife resource concerns over road density, (3) Subsistence use concerns, and (4) Planned development of trail system into Peru Lake area.

**UNITS ACCESSED:** 529-212, 214, 215, and 218

**STREAM CROSSINGS:** 20 perennial stream crossings of which 8 crossings require >48" CMP's. One Class I crossing will have timing restrictions applied. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Several V-notch crossings. Crosses 500' of muskeg and skirts along the edge of muskeg for several more feet. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Several units.

**POTENTIAL ALTERNATE ROUTE:** Access to units 529-212, 214, 215, and 218 may be obtainable via the existing 2085 road and proposed road 64-77-22 to unit 529-223. The alternate route would exit unit 529-223 low on the slope in the southwest corner, and would continue to the southeast, passing below proposed unit 529-220, between the unit and Peru Lake. The route would continue in an easterly direction, south of the lake, to unit 529-218. This alternate route could be investigated during final layout.

**Road Nodes:** 7513 - 7520-7525

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 65-77-10.1

**VCU:** 529

**GIS LENGTH:** 0.50 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Previously unroaded, unentered area, (2) Wildlife resource concerns over road density, (3) Subsistence use concerns, and (4) Planned development of trail system into Peru Lake area.

**UNITS ACCESSED:** 529-214

**STREAM CROSSINGS:** 5 Class III streams crossed, no difficult crossing or large CMP required. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road skirts along edge of timber/muskeg boundary. Has 1,000 feet of 12 percent adverse road grades. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Road can be extended 1000 feet to access a setting to the North of unit 529-214.

**RECOMMENDED CHANGE:** Continue road 65-77-10.1 to Unit 529-212, joining road 65-77-10 near the SW corner of that unit.

**Road Nodes:** 7521 - 7526-7527



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-10.2

**VCU:** 529

**GIS LENGTH:** 0.32 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Previously unroaded, unentered area, (2) Wildlife resource concerns over road density, (3) Subsistence use concerns, and (4) Planned development of trail system into Peru Lake area.

**UNITS ACCESSED:** 529-215

**STREAM CROSSINGS:** 5 Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Over 1,000' sustained 15 percent favorable road grade. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Could possibly be extended to the ridge top and cross over to access timber on SE side of ridge.

**Road Nodes:** 7522 - 7528-7529

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-12.1

**VCU:** 530

**GIS LENGTH:** 1.32 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Wildlife resource concerns over road density, (3) Located within an old-growth block.

**UNITS ACCESSED:** 530-234 and 530-236

**STREAM CROSSINGS:** 15 Class III stream crossings and 1 Class IIA stream crossing requiring a 50' bridge. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Bridge placement over Class IIA stream on segment of road accessing 530-236 will have seasonal constraints for construction. Road is within a TTRA buffer parallel to stream for 400 feet. Road drainage needs to be designed so that road sediment will not enter streams. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Possible to extend further up Buster Creek drainage.

**RECOMMENDED CHANGE:** Investigate access to Unit 530-236 from the existing road in 89-94 Unit 530-109. This would require replacing a bridge across Alder Creek on the East side of Unit 530-109 instead of constructing a new crossing. This alternative would also eliminate the need for a road within the TTRA buffer for 400 feet between Units 530-234 and 530-236.

**Road Nodes:** 1701 - 1706

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-19

**VCU:** 531.1

**GIS LENGTH:** 0.23 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 531.1-205

**STREAM CROSSINGS:** No new construction across streams is required. Replacement of 2 bridges and one CMP across Class I streams required-reconstruct 2931 road to reach Road 65-77-19. Timing restrictions will be applied. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Rd. 65-77-19 is located across 200' of swampy ground. Requires replacement of bridges over 2 Class I streams to reopen the 2931 road. Reconstruction of the 2931 road will also be required.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None.

**Road Nodes:** 7607- 7607



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-20

**VCU:** 531.1

**GIS LENGTH:** 0.29 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat and (2) Located within a large, contiguous old-growth block.

**UNITS ACCESSED:** 531.1-257

**STREAM CROSSINGS:** 2 Class III stream crossings, one of which requires a large CMP (>48"). For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. Reconstruction of 2931 Road will require replacement of bridge over Class 1 stream. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Calder Bay. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Requires replacement of bridge over Class I stream on 2931 road. Road located within Calder Bay viewshed but all or most of road will be buffered by timber. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 7601 - 7610-7611

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-20.1

**VCU:** 531.1

**GIS LENGTH:** 0.12 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Located within a large, contiguous old-growth block, and (3) Karst resource concerns.

**UNITS ACCESSED:** 531.1-208, helicopter landing for 531.1-213.

**STREAM CROSSINGS:** Class I crossing on 2931 road will have timing restrictions applied. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17. Two additional Class I crossings to access unit 205, and two Class I crossings to potential helicopter landing. All on reconstructed roads; apply timing restrictions.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** The first 0.06 miles is road reconstruction of an existing spur. Requires replacement of bridge over Class I stream on 2931 road. Road crosses high vulnerability karst. For protection of karst resources apply mitigation measure Kr3, Kr4.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Can be extended up the ridge to another setting.

**Road Nodes:** 7603 - 7631-7633

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-22 beginning from Road 65-77-23 STA 103+50

**VCU:** 529, 531.1

**GIS LENGTH:** 1.38 miles

**ROAD CLASS:** Collector

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Previously unroaded, unentered area, (2) Wildlife resource concerns over road density, (3) Numerous stream crossings, and (4) Karst resource concerns

**UNITS ACCESSED:** 529-220 and 531.1-220

**STREAM CROSSINGS:** 7 stream crossings, one requiring a greater than 48" CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Continuation of road 65-77-23 as a main haul route to Calder Bay LTF. Changes from flagged route in the intersection of 65-77-22 and 65-77-23 are suggested to eliminate the need for one bridge (see files). Road is located through muskeg for  $\pm 1,000$  feet. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12. Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measure Kr3.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Several settings will be left after this entry in the accessed area.

**Road Nodes:** 7511 - 7515



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-22.1 and spur 65-77-22.1A

**VCU:** 529, 531.1

**GIS LENGTH:** 0.5 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Previously unroaded, unentered area, (2) Wildlife resource concerns over road density, and (3) Karst resource concerns.

**UNITS ACCESSED:** 531.1-220

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** 300 feet of rock blasting required. Road location crosses some muskeg. Spur takes off with a switchback curve with 50' radius. 100' rock blasting also required on spur. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12. Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measure Kr3.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 7514 - 7560-7561  
7560 - 7562

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-22.2

**VCU:** 531.1

**GIS LENGTH:** 0.20 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 531.1-221

**STREAM CROSSINGS:** Road crosses high vulnerability karst area. For protection of karst resources apply mitigation measure Kr3. 2 large Class III streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses 2 large streams each requiring large CMP.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 7512 - 7512.1

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-23 to STA 103+50

**VCU:** 531.1

**GIS LENGTH:** 2.25 miles

**ROAD CLASS:** Collector

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unroaded, unentered area, (2) Subsistence use concerns, (3) 1 Class I and 42 Class III stream crossings, and (4) Karst resource concerns.

**UNITS ACCESSED:** 531.1-230

**STREAM CROSSINGS:** 42 Class III perennial streams (4 large CMP >48"); 5 dry stream and V-notch channels. Apply timing restrictions to Class I crossing.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. Crosses two short distances of karst topography with a very small cave opening located above road location at STA 2+65. For protection of karst resources apply mitigation measures Kr3, Kr4. There is 1200 feet of road located across slopes >55 percent. Only 250 feet of rock blasting noted. One change in the alignment is suggested for the intersection of Road 65-77-22 and 65-77-23 which is discussed in Road 65-77-22 Road Phase I card. There is one difficult V-notch crossing and 7 of no special concern. The road crosses muskeg for ±1000 feet. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses the upper Calder Creek area from Alder Creek.

**Road Nodes:** 7511 - 7505



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-77-23.2

**VCU:** 531.1

**GIS LENGTH:** 0.09 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 531.1-230 setting

**STREAM CROSSINGS:** One Class III stream crossing requiring a small CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 7505 - 7505.1

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-9 and 10

**VCU:** 533

**GIS LENGTH:** 1.32 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Located within a large, contiguous old-growth block, and (3) Wildlife resource concerns over road density.

**UNITS ACCESSED:** 533-246 and 533-247

**STREAM CROSSINGS:** Alignment requires crossing of Class I stream. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** The location West of Units 533-246 has not been field verified. The road location within and between Units 533-246 and 533-247 has been field verified. Road crosses a Class I stream that will require a large culvert. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses a setting north of 533-246, a unit between 533-246 and 533-247, and could be extended to the south through a saddle to access timber above Red Lake if desired.

**Road Nodes:** 2302 - 2309

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-14

**VCU:** 533

**GIS LENGTH:** 0.66 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Located within a large, contiguous old-growth block, (2) Wildlife resource concerns over road density, and (3) Numerous stream crossings.

**UNITS ACCESSED:** 533-250

**STREAM CROSSINGS:** 12 Class III crossings. One Class I crossing (bridge replacement) on existing 2078 road. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Contours 300-400 feet above Class I stream while crossing 12 Class III streams. Road drainage design will be critical to prevent road sediment from entering streams. One Class I stream crossing on reconstructed road segment (2078 Rd). Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** One additional setting is available for future harvest south of Unit 533-250.

**Road Nodes:** 2501 - 2503



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-19.1

**VCU:** 533

**GIS LENGTH:** 0.52 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat, (2) Road bisects patch of old growth, (3) Roding into a previously unroaded area, and (4) Numerous stream crossings.

**UNITS ACCESSED:** 533-222

**STREAM CROSSINGS:** 18 Class III streams requiring small CMP's. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses 18 small Class III streams. Intersection with 65-78-31 can be designed to haul either toward Lab Bay LTF or Calder Bay LTF. Road crosses 1000 feet of open muskeg, however muskeg is shallow to bedrock. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None. road cannot be extended due to topography.

**Road Nodes:** 6903-6904 - 6907-6909

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 65-78-24 & 24.4

**VCU:** 533, 534, 537.1

**GIS LENGTH:** Collector = 3.18 miles; Local = 0.27 miles

**ROAD CLASS:** 65-78-24 Collector

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality deer and marten habitat and (2) Wildlife concerns over road density.

**ROAD CLASS:** 65-78-24.4 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality deer and marten habitat and (2) Wildlife concerns over road density.

**UNITS ACCESSED:** 6 cable logged unit + 6 helicopter units

**STREAM CROSSINGS:** 8 small Class III streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses only 450 feet of >55% side slopes of which only 250 feet requires rock blasting. Road grades are  $\geq 15\%$  favorable for a total of 2800 feet with maximum grade of 18%. Several muskeg crossings. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Several settings in between this entry will be accessed by this road.

**POTENTIAL ALTERNATE ROUTE:** Access to unit 533-248 (and others) may be obtainable by linking road 65-78-24 to road 2077100 that was constructed in 1994. This route would eliminate approximately 1 mile of road construction for road 65-78-24. Road 2077100 would link to road 65-78-24 at approximately station 92+70.

Road Nodes:     24 = 27 - 2701-2710  
                     24.4 = 2710-2713

**Lab Bay Timber Sale EIS  
Phase I Road Cards**

**ROAD NUMBER:** 65-78-24.2

**VCU:** 533

**GIS LENGTH:** 0.22 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 533-249

**STREAM CROSSINGS:** None.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Easy road. Short spur to access landing for unit 533-249.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None.

Road Nodes: 2702 - 2770



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-25

**VCU:** 537.1

**GIS LENGTH:** 0.44 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife concerns over increasing road density in an already highly roaded area.

**UNITS ACCESSED:** 537.1-208

**STREAM CROSSINGS:** 3 Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses 850' of >55% side slopes up to 90%. Some end hauling and rock blasting required. Gives good access to 2 landings for future entry. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses 2 settings north of unit 537.1-208.

**POTENTIAL ALTERNATE ROUTE:** Access to unit 537.1-208 may be obtainable from a road that would begin at the 2077 road, proceed northward and enter the southwest corner of the unit.

**Road Nodes:** 2703 - 2730-2731

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-31 (Big Creek to Upper Marble Creek)

**VCU:** 531.1, 533

**GIS LENGTH:** 1.01 miles

**ROAD CLASS:** 65-78-31 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife habitat and (2) Rooding into a previously unroaded area.

**UNITS ACCESSED:** 531.1-242 (helicopter accessed) and 533-222, 224

**STREAM CROSSINGS:** 6 Class III streams crossed, only 1 of those required a large CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Extends road 2080 through bottom of Unit 533-224 to divide between Big Creek and Marble Creek. 5000 feet of road is located through muskeg which is generally very shallow down to solid granite bedrock. The bedrock generally has 10 to 30 percent sideslopes so very little rock blasting will be required. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses upper Marble Creek and upper Big Creek drainages. Very little timber in upper Marble Creek.

**Road Nodes:** 2205 - 2206 - 6904

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-78-32 and 65-78-32.1

**VCU:** 536

**GIS LENGTH:** Combined = 1.00 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Wildlife resource concerns over road density.

**UNITS ACCESSED:** 536-208 and 536-209

**STREAM CROSSINGS:** 65-78-32 has 7 Class III stream crossings; 65-78-32.1 has 11 Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** There is a 50' radius switchback at the beginning of Road 65-78-32.1 that cuts 12' into wet soils. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**POTENTIAL ALTERNATE ROUTE:** Access to Unit 536-208 may be obtainable from road 1500900 connecting to the end of road 65-78-32.1 at node 6206. Then continuing northward and terminating at the North end of Unit 536-208 (node 6202). An additional short spur would be needed to access the lower landing from road 1500886. This approach would eliminate approximately 0.4 miles of road within the unit and the switchback would no longer be required. This alternate route could be investigated during final layout.

Road Nodes:     6201 - 6203  
                     6203 - 6206



## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 65-79-05

**VCU:** 534, 534.1

**GIS LENGTH:** 4.75 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Deer winter range, (2) Limited wildlife cover, (3) Access into previously unroaded area, and (4) Subsistence use concerns.

**UNITS ACCESSED:** 6 units along Pine Creek; 534-225, 534-226, 534-228; 534.1-204, 534.1-211, 534.1-212

**STREAM CROSSINGS:** There are 2 Class I crossings, 1 requiring a 60 foot bridge, and 2 Class IIA crossings; apply timing restrictions. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17. There are 3 V-notches.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** 1200' with sideslopes >55%. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12. There are several muskegs on or near the locations. Relatively few quarry sites on northern ½ of project. The construction is generally light and stream crossings generally easy. Mining claim beyond end of road (beyond Unit 534.1-204).

**FUTURE TIMBER ACCESS POSSIBILITIES:** Several future units along Pine Creek.

**Road Nodes:** 2404 - 2461-2475

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-79-05.2 & 05.2A

**VCU:** 534

**GIS LENGTH:** 0.66 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 534-228

**STREAM CROSSINGS:** There are two small streams requiring small CMP on this location. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** The location is on stable soils of flat to gentle sideslope; grades area moderate; construction is light. Road crosses low or moderate vulnerability karst area. For protection of karst resources apply mitigation measures Kr4, Kr7.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None.

Road Nodes: 2460 - 2482

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 65-79-13, 13.1, 13.2, & 13.3

**VCU:** 535

**GIS LENGTH:** Local = 1.61 miles; Temporary = 0.29 miles

**ROAD CLASS:** 65-79-13 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Increased road density in an already highly roaded VCU.

**ROAD CLASS:** 65-79-13.1, 13.2, 13.3 Temporary

**UNITS ACCESSED:** 535-207, 208, & helicopter landing for 535-209

**STREAM CROSSINGS:** 22 Class III stream crossings all of which require only a small CMP.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses a total of 2,700 feet of steep side slopes over 55%. Some expensive road construction. Long lengths of sustained favorable road grades over 12%, some as high as 18%. 750 feet of muskeg crossing.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses settings between units and could be spurred off to the west to access settings to the north of unit 535-207.

**POTENTIAL ALTERNATE ROUTE:** Access to units 535-208 and 535-209 may be obtainable by relocating proposed road 65-79-13 higher on the ridge than planned. This alternate route would enter unit 535-208 further west than currently shown and have a short spur road to access a landing. The alternate route would continue southwest along ridge to a point west of unit 535-209. A temporary spur road would continue east to access preferred landing locations at the top of unit 535-209. Access to future settings between units 535-208 and 539-209 could be obtained via temporary spur roads from the alternate route.

Road Nodes: 5701 - 5704  
5702 - 5707  
5703 - 5708  
5704 - 5709



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-79-25

**VCU:** 535

**GIS LENGTH:** 0.72 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Increased road density in an already highly roaded VCU.

**UNITS ACCESSED:** 535-205

**STREAM CROSSINGS:** 14 small Class III stream crossings all of which only require small CMP's. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses through  $\pm 700$  feet of muskeg before entering unit. Crosses  $\pm 400$  feet of over 55% side slopes. Most of road grade is adverse with a maximum of 10%. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 5603 - 5604 - 5605

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-80-19

**VCU:** 535, 539

**GIS LENGTH:** 0.58 mile

**ROAD CLASS:** Local

**WILDLIFE TIMING RESTRICTIONS:** None

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Increased road density in an already highly roaded area, and (2) High use wildlife area.

**UNITS ACCESSED:** 539-206

**STREAM CROSSINGS:** There are 5 minor stream crossings requiring small CMP's. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** This location crosses and skirts some small muskeg areas and also has a short stretch of 13% favorable grade moderate slopes and easy construction area positive aspects. Road reflagged to avoid karst features.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Possibly one more unit south.

**Road Nodes:** 5504 - 5507

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 65-80-31

**VCU:** 539

**GIS LENGTH:** 0.90 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Increased road density in an already highly roaded area, (2) High quality wildlife habitat, (3) Numerous stream crossings, and (4) Karst resource concerns.

**UNITS ACCESSED:** 539-220 & 539-221

**OTHER RESOURCE CONCERNS:** The Class IIa stream crossing at STA 6+03 and the road near this stream will require construction methods that minimize sedimentation into the stream. There are some signs of instability along this stream. Fish passage will be required. There is 500' of full bench and endhaul required. This area is rock and crosses 2 near vertical bluffs. This was the only route we could find to log the upper half of Unit 539-221 which is where the best timber is. Road crosses high vulnerability karst area into Unit 539-221. For protection of karst features apply mitigation measures Kr3, Kr4.

**STREAM CROSSINGS:** One Class IIa stream crossing with timing restriction and 17 Class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** Trumpeter swans have been observed wintering at Exchange Cove. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**FUTURE TIMBER ACCESS POSSIBILITIES:** This road will access the unit between 539-220 and 539-221 and may be extended south but this would require crossing a large V-notch.

**Road Nodes:** 54 - 5401-5408



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-78-05

**VCU:** 536

**GIS LENGTH:** 0.73 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife resource concerns over road density and (2) Karst resource concerns.

**UNITS ACCESSED:** 536-217

**STREAM CROSSINGS:** There are 4 Class III stream crossings requiring CMP's.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst features apply mitigation measures Kr3, Kr4. There is karst from STA 1+00R to 8+66R. 912' of full bench will be required. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is timber to the north and west of unit 536-217 that can be accessed from this road or from the 29 road.

**Road Nodes:** 63 - 6301-6302

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-78-34

**VCU:** 536

**GIS LENGTH:** 0.23 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Wildlife resource concerns over road density and (2) Karst resource concerns.

**UNITS ACCESSED:** 536-211

**STREAM CROSSINGS:** No major streams.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst features apply mitigation measures Kr3, Kr4. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is timber to the west of unit 536-211 that will be best accessed from this road. Reconstructed segment of Road 1598-300 will require replacement of bridge over Class III stream. Apply timing restrictions.

**Road Nodes:** 2908 - 2909

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-79-15, 15.2 and 15.3

**VCU:** 538

**GIS LENGTH:** Combined = 0.59 miles

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 538-223

**STREAM CROSSINGS:** 5 small stream crossings. Reconstruction of spur road off of road 27 will require a modular bridge over 108 Creek (Class I). Apply timing restriction. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** Road crosses high vulnerability karst area through previous harvest area. For protection of karst features apply mitigation measure Kr3, Kr4.

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst features apply mitigation measures Kr3, Kr4.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is a unit to the south of unit 538-223 that can be accessed from this road system.

**Road Nodes:** 4402 - 4408



## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 66-79-25 & 25.1

**VCU:** 538, 540

**GIS LENGTH:** Combined = 1.01 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High use wildlife area and (2) Wildlife resource concerns over road density.

**UNITS ACCESSED:** 540-223

**STREAM CROSSINGS:** One Class I stream crossing; 2 Class III perennial stream crossings one of which will require a >48" CMP. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road location requires about 500 feet of rock blasting of various degrees to construct. The remainder of the road is typical to simple construction.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Road can be extended to the north from the E.O.P. to access future settings.

Road Nodes:     5004 - 5010-5013  
                     5010 - 5014-5015

## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 66-79-35

**VCU:** 538

**GIS LENGTH:** 0.12 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 538-208

**STREAM CROSSINGS:** There are two minor stream crossings requiring pipe. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road grades are moderate to steep. There is a segment of full bench road on 60-80% slope.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 4603 - 4631

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-04 and 04.1, 04.2, 04.2-1

**VCU:** 540

**GIS LENGTH:** Local (combined) = 1.74 miles; Temporary = 0.04 miles

**ROAD CLASS:** 66-80-04, 04.1, 04.2 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife area, (2) Wildlife resource concerns over road density, and (3) Numerous stream crossings.

**ROAD CLASS:** 66-80-04.2-1 Temporary

**UNITS ACCESSED:** 540-206 & 540-210

**STREAM CROSSINGS:** 9 Class III stream crossings. One Class I crossing requiring a CMP >48 inch, and one Class IIb crossing before reaching unit 206; apply timing restrictions to both. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** 1.25 miles of new road construction to access units 540-206 & -210, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. 0.4 of these miles are outside of the 1/2 mile buffer, but dependent on prior construction within the buffer. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** No quarry sites were noted so lack of rock might be a problem. Some wet areas were noted but overall the soils were considered good. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is a unit between units 540-206 and 540-210 that this road passes through and spur 66-80-04.2 can be extended north to pick up more units.

Road Nodes:     5306 - 5340-5344  
                     5343 - 5350  
                     5341 - 5345-5348  
                     5347 - 5349



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-05

**VCU:** 539

**GIS LENGTH:** 1.32 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High quality wildlife area, (2) Increased road density into an already highly roaded area, and (3) Karst resource concerns.

**UNITS ACCESSED:** 539-222

**STREAM CROSSINGS:** One Class I crossing requiring a bridge, with timing restrictions; 17 Class III crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11. For protection of fish and fisheries habitat, implement timing restrictions on instream road construction activities, BMP's 14.6, 14.10, 14.14, 14.16, 14.17.

**WILDLIFE TIMING RESTRICTIONS:** 0.25 miles of new road construction to access unit 539-222, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4. Trumpeter swans have been observed wintering at Exchange Cove. Timing restrictions on human activities would be implemented within 1/2 mile of areas receiving use by swans. Mitigation measure W7.

**OTHER RESOURCE CONCERNS:** Road crosses low to moderate vulnerability karst area. For protection of karst features apply mitigation measure Kr7. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Unit 539-222 covers most of the available timber in this area but there may be some to the east that could be accessed from this road.

**Road Nodes:** 5304 - 5320-5321

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-07

**VCU:** 539, 540

**GIS LENGTH:** 0.51 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 539-215

**STREAM CROSSINGS:** One Class III stream crossing. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Road crosses high vulnerability karst area. For protection of karst features apply mitigation measure Kr4. Approximately 700' of this road is across soft ground that will require a deep base course of rock. The terrain is gentle.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None.

**Road Nodes:** 5301 - 5310-5311

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-08

**VCU:** 539, 540

**GIS LENGTH:** 0.91 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) High use wildlife area and (2) Increased road density within an already highly roaded area.

**UNITS ACCESSED:** 540-224

**STREAM CROSSINGS:** 10 small Class III stream crossings all of which require only small CMPs. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Located on the east slope facing coastal waters. Side slopes are gentle to moderate. Several small stream crossings. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Accesses settings between north boundary of unit 540-224 and F.S. Road 3070 P-Line.

**Road Nodes:** 5305 - 5360-5363



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-19

**VCU:** 540

**GIS LENGTH:** 0.48 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** Increased road density in an already highly roaded area.

**UNITS ACCESSED:** 540-225

**STREAM CROSSINGS:** one Class III stream. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** There are several soft areas that may require lots of fill. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There are units to the south that can be accessed from this road.

**Road Nodes:** 5102 - 5104

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-30

**VCU:** 538, 540

**GIS LENGTH:** 0.94 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Eliminate

**ACCESS STRATEGY DETERMINATION:** (1) Domestic water supply for Whales Resort and (2) Increased road density in an already highly roaded area.

**UNITS ACCESSED:** 538-210 & 540-221

**STREAM CROSSINGS:** One Class III with a switchback crossing and one small perennial seep. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 0.9 miles of new road construction to access unit 538-210 & - 221, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** There are several pitches of 12-15% favorable grade and a switchback in a draw. Rock construction on the first 25% of road. The rest is common excavation on moderate sideslopes. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 5005 - 5021-5024

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-11 and spur A

**VCU:** 551

**GIS LENGTH:** 0.13 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-263

**STREAM CROSSINGS:** None.

**WILDLIFE TIMING RESTRICTIONS:** 0.1 miles of new road construction to access unit 551-263, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** There is a 50' radius curve on 66-80-11 but it would require blasting through rock to enlarge it.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None.

Road Nodes: 8035 - 8070 : 8036 - 8071



## Lab Bay Timber Sale EIS Phase I Road Cards

**ROAD NUMBER:** 66-80-28 seg "A" & 66-80-28.1

**VCU:** 551

**GIS LENGTH:** Local = 1.90 miles; Temporary = 0.13 mile

**ROAD CLASS:** 66-80-28 Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**ROAD CLASS:** 66-80-28.1 Temporary

**UNITS ACCESSED:** 551-216, 551-219, 551-220

**STREAM CROSSINGS:** 15 class III stream crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 0.7 miles of new road construction to access unit 551-216, -219, & -220, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

1.25 miles of road 66-80-28, accessing units 551-218, -219, -220 would be affected by timing restrictions on activities within 1/2-mile of a known wolf den. Timing restrictions would be implemented from February 1 to June 30, and would be lifted after April 30 if the den is determined to be unoccupied. Mitigation measure W8.

**OTHER RESOURCE CONCERNS:** The road comes within 100' of a small lake. The lake buffer could be increased by lengthening the road. There are 2 rock sources called but the rock did not appear to be very good quality. There are 2 soil movement areas that could not be avoided. Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** This road passes through timber its whole length but it is poorly stocked and poor quality.

Road Nodes: 8001 - 8006  
8003 - 8007

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-28 Seg. B,& 28.2, 28.3, 28.4, 28.4A, 28.5

**VCU:** 551

**GIS LENGTH:** Local = 3.23 miles; Temporary = 0.39 mile

**ROAD CLASS:** 66-80-28 Seg B Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**ROAD CLASS:** 66-80-28.2 & 28.3 & 28.4 & 28.4A & 28.5 Temporary

**UNITS ACCESSED:** 551-213 & 551-201

**STREAM CROSSINGS:** 18 class III streams; 2 class IIB streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** There are 2 Class IIB fish-bearing streams crossed, one of which is in a V-notch. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** The road passes through several units. There is no timber beyond this road system.

Road Nodes:     8001 - 8013  
                     8010 - 8014  
                     8011 - 8015  
                     8012 - 8018  
                     8017 - 8019

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-28.6

**VCU:** 551

**GIS LENGTH:** 0.24 mi

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-214

**STREAM CROSSINGS:** Two Class IIB crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** None noted.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 8016 - 8021-8022



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-33

**VCU:** 551

**GIS LENGTH:** 3.83 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** 551-224, 551-223, 551-207, 551-209, 551-211, 551-261, 551-263, 551-267

**STREAM CROSSINGS:** 13 class III streams; 3 class IIB streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 2.0 miles of new road construction to access units 551-211, -261, -263 & -267, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. 0.8 of these miles are outside of the 1/2 mile buffer, but dependent on prior construction within the buffer. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** The V-notch and switchback are a concern and an alternate route was recommended but does not appear to be any better. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** This is a main road on Thorne Is. that will access many more units.

**Road Nodes:** 8008 - 8029-8038

**Lab Bay Timber Sale EIS  
Phase I Road Cards**

**ROAD NUMBER:** 66-80-33A & 33A1

**VCU:** 551

**GIS LENGTH:** 0.25 mi

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-224

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** · 8028 - 8039-8040

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-33B

**VCU:** 551

**GIS LENGTH:** 0.69 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-223 & 551-224

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** The switchback on level ground at 0+00 may need to be moved east to facilitate joining Rd 66-80-33. Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 8030 - 8042-8043



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-33.2

**VCU:** 551

**GIS LENGTH:** 0.27 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-267

**STREAM CROSSINGS:** One class III stream. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** 0.25 miles of new road construction to access unit 551-267, may be affected by timing restrictions on blasting within 1/2 mile of a bald eagle nest. Although road 66-80-33.2 is not within the buffer, road 66-80-33, which must be constructed prior to this road, is within the 1/2 mile buffer. No blasting may occur within this radius between March 1 and May 31, and if the nest is occupied, the restriction is extended to August 31. Mitigation measure W4.

**OTHER RESOURCE CONCERNS:** Crosses high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

Road Nodes: 8034 - 8049

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 66-80-33.5 & 33.6

**VCU:** 551

**GIS LENGTH:** 1.05 miles

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** 551-207 & 551-209

**STREAM CROSSINGS:** 21 class III streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Crosses some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Rd. 66-80-33.5 can be extended to the north to pick up another unit. It also passes through a unit to the south of unit 551-207. Rd. 66-80-33.6 could be extended to the SE but this area may be accessible from Rd 66-80-33

Road Nodes:     8031 - 8045-8047  
                     8045 - 8048

# **Lab Bay Timber Sale EIS**

## **Phase I Road Cards**

**ROAD NUMBER:** 66-80-34 & 34A & 34B

**VCU:** 551

**GIS LENGTH:** 0.97 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** 551-205

**STREAM CROSSINGS:** 5 class III crossings. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** There is a slide area noted at sta. 6+10R (34A). 340' of full bench required, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** There is timber to the East that can be reached by extending 34A & 34B. There is timber to the south that can be reached by extending 66-80-34.

Road Nodes:     8009 - 8023-8024  
                     8023 - 8025-8026  
                     8025 - 8027



## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 67-80-04A

**VCU:** 551

**GIS LENGTH:** 1.18 miles

**ROAD CLASS :** Collector

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage .

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** Most of Thorne Island

**STREAM CROSSINGS:** V-notches @ 28+50, 28+90 & 60+65 require fills. There are 4 other small streams. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** There are about 5 areas where this location crosses muskeg. There are 3 "V" notch crossings, and one short section of unstable soils, implement BMP's 14.7, 14.8, 14.12. Generally easy construction and moderate sideslopes.

**FUTURE TIMBER ACCESS POSSIBILITIES:** All of Thorne Island except units 551-227, 551-230, 551-231 and whatever future units might abut these three.

**Road Nodes:** 8050 - 8055-8058

# **Lab Bay Timber Sale EIS**

## **Phase I Road Cards**

**ROAD NUMBER:** 67-80-04B

**VCU:** 551

**GIS LENGTH:** 0.99 mile

**ROAD CLASS:** Local

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** 551-227 & 551-230

**STREAM CROSSINGS:** Only 2 small drainages were noted on this location. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** This location has some muskeg and wet soil, but is generally easy construction on gentle sideslopes

**FUTURE TIMBER ACCESS POSSIBILITIES:** None

**Road Nodes:** 8050 - 8052

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 67-80-04.1

**VCU:** 551

**GIS LENGTH:** 0.19 mile

**ROAD CLASS:** Temporary spur

**UNITS ACCESSED:** 551-268

**STREAM CROSSINGS:** None were noted.

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Favorable grades of 15% are found on 60% of this location. Some high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** Not likely due to buffers & scenic values.

**Road Nodes:** 8058 - 8060



**Lab Bay Timber Sale EIS  
Phase I Road Cards**

**ROAD NUMBER:** 67-80-04.3

**VCU:** 551

**GIS LENGTH:** 0.18 mile

**ROAD CLASS:** Temporary

**UNITS ACCESSED:** 551-230

**STREAM CROSSINGS:** None

**WILDLIFE TIMING RESTRICTIONS:** None

**OTHER RESOURCE CONCERNS:** Grade of 12 and 15% favorable are the only concern of this location

**FUTURE TIMBER ACCESS POSSIBILITIES:**

Road Nodes: 8052 - 8054

## **Lab Bay Timber Sale EIS Phase I Road Cards**

**ROAD NUMBER:** 67-80-08

**VCU:** 551

**GIS LENGTH:** 0.66 mile

**ROAD CLASS:** Collector

**SERVICE LEVEL:** D

**MAINTENANCE LEVEL:** 1

**ACCESS STRATEGY:** Discourage

**ACCESS STRATEGY DETERMINATION:** (1) Entry into a previously unaltered area and (2) The only vehicle access to the island is by barge.

**UNITS ACCESSED:** All on Thorne Island

**OTHER RESOURCE CONCERNS:** Wet, swampy soils requiring more than normal number of small CMP and one 60' radius switchback are found on this location. Greater than normal subgrade reinforcement may be required.

**STREAM CROSSINGS:** 14 stream crossings of minor flows. For protection of water quality, riparian areas, fish and fisheries habitat on all stream crossings, implement BMP's 12.6, 12.7, 13.16, 14.9, 14.11.

**WILDLIFE TIMING RESTRICTIONS:** Some areas of high MMI soils, implement BMP's 14.7, 14.8, 14.12.

**FUTURE TIMBER ACCESS POSSIBILITIES:** All of Thorne Island

**Road Nodes:** TILTF - 8050

# **Appendix I**

## **Road Management Objectives**





Road Number	VCU	Alternative						GIS* Length	Road Class			Traffic Service Level				Road Maintenance		
		2	3	4	5	6	Arterial		Collector	Local	Temp	A	B	C	D	1	2	3
64-75-24	527	1		1	1		0.63			0.63							0.63	
64-75-24A	527	1		1	1		0.06				0.06				0.06			0.06
64-75-24B	527	1		1	1		0.04								0.04			0.04
64-75-24C	527	1		1	1		0.05								0.05			0.05
64-76-08	527	1			1		0.25			0.25					0.25			0.25
64-76-08.1	527	1			1		0.11			0.11					0.11			0.11
64-76-08.1A	527	1			1		0.29			0.29					0.29			0.29
64-76-09.1	529	1	1				0.16				0.16				0.16			0.16
64-76-09.2	529	1	1				0.35				0.35				0.35			0.35
64-76-09.2A	529	1	1				0.06				0.06				0.06			0.06
64-76-10	529	1	1	1		1	0.18				0.18				0.18			0.18
64-76-10.1	529	1	1	1			0.36				0.36				0.36			0.36
64-76-10.3	529	1		1			1.03			1.03					1.03			1.03
64-76-11	529	1	1	1			0.23			0.23					0.23			0.23
64-76-11.1	529	1	1	1			0.14				0.14				0.14			0.14
64-76-12	529/530	1		1			0.61			0.61					0.61			0.61
64-76-12.1		1		1			0.06			0.06					0.06			0.06
64-76-14	529	1	1	1		1	0.55			0.55					0.55			0.55
64-76-14A	529	1	1	1		1	0.19			0.19					0.19			0.19
64-76-14B	529	1	1	1		1	0.18			0.18					0.18			0.18
64-76-14.1	529	1	1	1		1	0.49				0.49				0.49			0.49
64-76-17	527	1			1		1.23			1.23					1.23			1.23
64-76-17.1	527	1			1		0.11			0.11					0.11			0.11
64-76-22	529	1	1	1		1	0.24				0.24				0.24			0.24
64-76-23	529	1	1	1		1	0.40								0.40			0.40
64-76-25	529	1	1	1	1	1	2.03		2.03						2.03			2.03
64-76-30	527	1		1	1		0.58			0.58					0.58			0.58
64-76-30A	527	1		1	1		0.06			0.06					0.06			0.06
64-77-17	530	1		1			0.59				0.59				0.59			0.59
64-77-18	530	1		1			0.99			0.99					0.99			0.99
64-77-18.3	530	1	1	1			0.15				0.15				0.15			0.15
64-77-19	530	1		1			0.63			0.63					0.63			0.63
64-77-19A	530	1		1			0.13				0.13				0.13			0.13

\* GIS length is in miles

Road Number	VCU	Alternative						GIS* Length	Road Class			Traffic Service Level				Road Maintenance		
		2	3	4	5	6	Arterial		Collector	Local	Temp	A	B	C	D	1	2	3
64-77-22	529	1	1	1		1		0.32			0.32				0.32	0.32		
64-77-23	532	1			1			1.60			1.60				1.60	1.60		
64-77-23.2	532	1			1			0.36				0.36			0.36	0.36		
64-77-29	530	1		1	1			1.70			1.70				1.70	1.70		
64-77-29.1	530	1		1	1			0.05				0.05			0.05	0.05		
64-77-30	530	1		1	1			1.28			1.28				1.28	1.28		
64-77-34	530/533	1	1		1			1.89			1.89				1.89	1.89		
64-78-29	532	1	1	1	1	1		0.76			0.76				0.76	0.76		
64-78-29	532	1	1	1	1			1.37			1.37				1.37	1.37		
64-78-29.1	532	1	1	1	1	1		0.18				0.18			0.18	0.18		
64-78-29.2	532	1	1	1	1			0.26				0.26			0.26	0.26		
64-78-29.3	532	1	1	1	1			0.38				0.38			0.38	0.38		
65-76-07	528	1	1	1		1		0.63			0.63				0.63	0.63		
65-76-12.1	528	1	1		1	1		0.88				0.88			0.88	0.88		
65-76-13	528	1	1		1	1		0.25			0.25				0.25	0.25		
65-76-32	528	1	1	1		1		0.13				0.13			0.13	0.13		
65-77-06	528	1		1				0.31			0.31				0.31	0.31		
65-77-10	529	1		1				0.29			0.29				0.29	0.29		
65-77-10	529	1	1		1	1		0.90			0.90				0.90	0.90		
65-77-10	529	1	1	1		1		0.53			0.53				0.53	0.53		
65-77-10	529	1		1				0.18			0.18				0.18	0.18		
65-77-10.1	529	1	1	1	1	1		0.50			0.50				0.50	0.50		
65-77-10.2	529	1	1	1	1	1		0.32			0.32				0.32	0.32		
65-77-12.1	530	1	1			1		0.66			0.66				0.66	0.66		
65-77-12.1	530	1	1	1		1		0.66			0.66				0.66	0.66		
65-77-19	531.1	1			1			0.23				0.23			0.23	0.23		
65-77-19A	531.1	1			1			0.20				0.20			0.20	0.20		
65-77-20	531.1	1			1			0.29			0.29				0.29	0.29		
65-77-20.1	531.1	1			1			0.12			0.12				0.12	0.12		
65-77-22	529/531.1	1		1				1.38							1.38	1.38		
65-77-22.1	529/531.1	1		1				0.37							0.37	0.37		
65-77-22.1A	529/531.1	1		1				0.13				0.13			0.13	0.13		
65-77-22.2	531.1	1		1				0.20				0.20			0.20	0.20		



Road Number	VCU	Alternative						GIS*	Road Class			Traffic Service Level			Road Maintenance			
		2	3	4	5	6	Length		Arterial	Collector	Local	Temp	A	B	C	D	1	2
65-77-23	531.1	1		1			2.25		2.25						2.25	2.25		
65-77-23.2	531.1	1		1			0.09					0.09			0.09	0.09		
65-78-09	533	1	1		1		0.93				0.93				0.93	0.93		
65-78-10	533	1	1		1		1.32				1.32				1.32	1.32		
65-78-14	533	1	1		1	1	0.66				0.66				0.66	0.66		
65-78-19.1	533	1	1	1	1	1	0.52				0.52				0.52	0.52		
65-78-24	533/537.1	1	1		1	1	1.09			1.09					1.09	1.09		
65-78-24	533/537.1	1	1	1	1	1	2.09			2.09					2.09	2.09		
65-78-24.1	533	1	1	1	1	1	0.07					0.07			0.07	0.07		
65-78-24.2	533	1	1	1	1	1	0.22					0.22			0.22	0.22		
65-78-24.4	533	1	1		1	1	0.27				0.27				0.27	0.27		
65-78-24.5	533	1	1		1	1	0.11					0.11			0.11	0.11		
65-78-25	537.1	1	1	1	1	1	0.44				0.44				0.44	0.44		
65-78-31	531.1/533	1	1	1	1	1	1.01				1.01				1.01	1.01		
65-78-32	536	1	1	1			0.56				0.56				0.56	0.56		
65-78-32.1	536	1	1	1			0.44				0.44				0.44	0.44		
65-79-05	534/534.1	1	1	1	1	1	2.19				2.19				2.19	2.19		
65-79-05	534/534.1	1	1	1	1	1	2.56				2.56				2.56	2.56		
65-79-05.2	534	1		1	1	1	0.40					0.40			0.40	0.40		
65-79-05.2A	534	1		1	1	1	0.26					0.26			0.26	0.26		
65-79-13	535	1	1	1	1	1	1.61				1.61				1.61	1.61		
65-79-13.1	535	1	1	1	1	1	0.04					0.04			0.04	0.04		
65-79-13.2	535	1	1	1	1	1	0.12					0.12			0.12	0.12		
65-79-13.3	535	1	1	1	1	1	0.13					0.13			0.13	0.13		
65-79-25	535	1	1	1	1	1	0.72				0.72				0.72	0.72		
65-80-19	535/539	1	1	1	1	1	0.58				0.58				0.58	0.58		
65-80-31	539	1		1	1	1	0.90				0.90				0.90	0.90		
66-78-05	536	1					0.73				0.73				0.73	0.73		
66-78-34	536	1		1	1	1	0.23				0.23				0.23	0.23		
66-79-15	538	1		1			0.40					0.40			0.40	0.40		
66-79-15.2	538	1		1			0.10					0.10			0.10	0.10		
66-79-15.3	538	1		1			0.09					0.09			0.09	0.09		
66-79-25	538/540	1	1	1		1	0.83				0.83				0.83	0.83		

\* GIS length is in miles

Road Number	VCU	Alternative						GIS* Length	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6	Arterial		Collector	Local	Temp	A	B	C	D	1	2	3	
66-79-25.1	538/540	1	1	1		1		0.18			0.18					0.18	0.18		
66-79-35	538	1	1	1				0.12				0.12					0.12	0.12	
66-80-04	540	1	1	1	1	1		1.41				1.41					1.41	1.41	
66-80-04.1	540	1	1	1	1	1		0.08				0.08					0.08	0.08	
66-80-04.2	540	1	1	1	1	1		0.25				0.25					0.25	0.25	
66-80-04.2-1	540	1	1	1	1	1		0.04				0.04					0.04	0.04	
66-80-05	539	1		1	1	1		1.32				1.32					1.32	1.32	
66-80-07	539/540	1		1				0.51					0.51				0.51	0.51	
66-80-08	539/540	1	1	1	1	1		0.91				0.91					0.91	0.91	
66-80-11	551	1	1		1			0.13					0.13				0.13	0.13	
66-80-19	540	1	1	1		1		0.48				0.48					0.48	0.48	
66-80-28A	551	1	1			1		1.90				1.90					1.90	1.90	
66-80-28B	551	1	1			1		3.23				3.23					3.23	3.23	
66-80-28.1	551	1	1	1	1	1		0.13					0.13				0.13	0.13	
66-80-28.2	551	1	1	1	1	1		0.06					0.06				0.06	0.06	
66-80-28.3	551	1	1	1	1	1		0.07					0.07				0.07	0.07	
66-80-28.4	551	1	1	1	1	1		0.17					0.17				0.17	0.17	
66-80-28.4A	551	1	1			1		0.04					0.04				0.04	0.04	
66-80-28.5	551	1	1		1	1		0.05					0.05				0.05	0.05	
66-80-28.6	551	1	1	1		1		0.24					0.24				0.24	0.24	
66-80-30	538/540	1	1	1		1		0.94				0.94					0.94	0.94	
66-80-33	551	1	1	1		1		3.83				3.83					3.83	3.83	
66-80-33A	551	1	1	1	1	1		0.24					0.24				0.24	0.24	
66-80-33A1	551	1	1	1		1		0.01					0.01				0.01	0.01	
66-80-33B	551	1	1	1	1	1		0.69					0.69				0.69	0.69	
66-80-33.2	551	1	1	1	1	1		0.27					0.27				0.27	0.27	
66-80-33.5	551	1	1	1		1		0.84					0.84				0.84	0.84	
66-80-33.6	551	1	1	1	1	1		0.21				0.21					0.21	0.21	
66-80-34	551	1	1	1	1	1		0.71				0.71					0.71	0.71	
66-80-34A	551	1	1			1		0.21				0.21					0.21	0.21	
66-80-34B	551	1	1	1	1	1		0.05					0.05				0.05	0.05	
67-80-04A	551	1	1	1		1		1.18				1.18					1.18	1.18	
67-80-04B	551	1	1	1	1	1		0.99				0.99					0.99	0.99	



Road Number	VCU	Alternative					GIS*	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6		Length	Arterial	Collector	Local	Temp	A	B	C	D	1	2
67-80-04.1	551	1	1		1		0.19				0.19				0.19	0.19		
67-80-04.3	551	1	1	1	1		0.18				0.18				0.18	0.18		
67-80-08	551	1	1	1	1		0.66		0.66						0.66	0.66		
Reconstruction Roads																		
15	536	1	1				0.79	0.79										
29	536	1	1				0.28	0.28							0.28	0.28		
29	536	1					0.13	0.13							0.13	0.13		
1598	536	1	1	1			0.85		0.85						0.85	0.85		
1598	536	1	1	1			0.12			0.12					0.12	0.12		
2078	533	1	1		1		0.06		0.06						0.06	0.06		
1500886	536	1	1	1			0.80			0.80				0.80			0.80	
2000810	532	1			1		0.14			0.14				0.14			0.14	
2900500	528	1	1		1		0.07			0.07					0.07	0.07		
2931100	531.1	1					0.84			0.89					0.84	0.84		
2931100	531.1	1			1		1.01			1.01					1.01	1.01		
3000570	535/539	1	1	1			0.37			0.37					0.37	0.37		
3000570	535/539	1	1	1	1		0.39			0.39					0.39	0.39		
2000864spur	529	1	1				0.27			0.27					0.27	0.27		
2086spur	529	1			1		0.88			0.88					0.88	0.88		
27spur	538	1		1			0.93			0.93					0.93	0.93		
2931100spur1	531.1	1			1		0.10			0.10					0.10	0.10		
2931100spur2	531.1	1			1		0.10			0.10					0.10	0.10		
Existing Roads																		
15	5360						1.22	1.22				1.22				1.18		0.038
15	5371						0.58	0.58				0.58				0.17		0.419
20	5270						7.52	7.52				7.52				1.18		6.335
20	5280						0.14	0.14				0.14						0.135
20	5290						4.81	4.81				4.81						4.809
20	5300						3.85	3.85				3.85						3.847
20	5320						2.31	2.31				2.31						2.31
20	5330						0.81	0.81				0.81				0.07		0.743

\* GIS length is in miles



Road Number	VCU	Alternative					GIS* Length	Road Class			Traffic Service Level			Road Maintenance		
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	
29	5280						2.65	2.65				2.65				2.65
29	5311						8.30	8.07		0.22		8.07		0.22		7.89
29	5360						2.32	2.24		0.08		2.24		0.08		2.29
30	5344						0.02	0.02				0.02				
30	5350						3.88	3.88				3.88				
30	5380						0.00	0.00				0				
30	5390						4.47	4.47				4.47				
30	5400						0.44	0.44				0.44				
1598	5360						2.14		2.02	0.12			2.02	0.12		2.14
1599	5360						0.01		0.01				0.01			0.01
1599	5371						1.13		1.13				1.13			1.13
2078	5330						1.48		1.48				1.48			1.17
2079	5320						3.75		3.75				3.75			1.20
2079	5340						2.54		2.54				2.54			2.54
2080	5330						3.35		2.27	1.07			2.27	1.07		3.35
2082	5320						2.33		2.33				2.33			
2083	5300						4.38		4.38				4.38			0.83
2084	5290						0.17		0.17				0.17			
2084	5300						1.01		1.01				1.01			
2085	5290						5.01		5.01				5.01			0.99
2086	5290						1.67		1.67				1.67			1.67
2087	5290						1.43		1.43				1.43			
2092	5270						2.95		2.95				2.95			
2710	5371						0.20			0.20				0.20		0.20
2710	5380						1.82			1.82				1.82		1.70
2720	5380						3.70		3.70				3.7			0.78
2730	5340						0.34		0.34				0.34			
2730	5344						0.80		0.80				0.8			
2730	5380						1.61		1.61				1.61			
2920	5311						1.03		1.03				1.03			0.80
2930	5311						1.36		1.24	0.12			1.24	0.12		1.36
2934	5280						0.37		0.37				0.37			
2934	5281						0.50		0.50				0.5			

Road Number	VCU	Alternative					GIS* Length	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	1	2	3
3060	5380						0.96		0.96						0.96			
3062	5380						0.93			0.93						0.93		
3062	5400						0.86			0.86							0.86	
3065	5380						0.21		0.21									0.21
3070	5390						0.54		0.54									0.539
3070	5400						0.87		0.87									0.872
3075	5350						3.21		3.21									3.214
3075	5390						0.98		0.98									0.981
293100	5311						0.05			0.05					0.05			
1500886	5360						0.81			0.81					0.80	0.01		
1500900	5360						0.17			0.17					0.17			
1500933	5360						0.45			0.45					0.45			
1598200	5360						0.05			0.05					0.05			
1598300	5360						0.63			0.63					0.63			
1599100	5371						0.30			0.30					0.30			
2000730	5371						0.40			0.40						0.40		
2000741	5371						0.79			0.79					0.79	0.00		
2000744	5371						0.14			0.14						0.14		
2000750	5380						0.53			0.53						0.53		
2000751	5380						0.16			0.16						0.16		
2000752	5380						0.70			0.70						0.70		
2000780	5371						0.00			0.00						0.00		
2000785	5340						0.95			0.95						0.95		
2000785	5371						0.33			0.33						0.33		
2000789	5330						0.53			0.53					0.40	0.13		
2000805	5320						0.15			0.15						0.15		
2000805	5330						1.42			1.42						1.42		
2000810	5320						1.70			1.70					0.72	0.98		
2000815	5300						0.10			0.10					0.10			
2000815	5320						1.47			1.47					1.47			
2000817	5300						0.38			0.38					0.38			
2000817	5320						0.33			0.33					0.33			
2000820	5320						1.86			1.86					1.82	0.04		



Road Number	VCU	Alternative					GIS* Length	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	1	2	3
2000822	5320						0.73			0.73				0.73		0.73		
2000824	5320						0.53			0.53				0.53		0.52	0.01	
2000830	5300						0.98			0.98				0.98		0.98		
2000838	5300						0.50			0.50				0.50			0.50	
2000840	5290						2.02			2.02				2.02		1.99	0.03	
2000850	5290						1.39			1.39				1.39			1.39	
2000851	5290						0.66			0.66				0.66			0.66	
2000860	5290						1.60			1.60				1.60		0.23	1.37	
2000861	5290						0.36			0.36				0.36		0.36		
2000864	5290						0.55			0.55				0.55		0.55		
2000866	5290						0.51			0.51				0.51			0.51	
2000900	5270						0.48			0.48				0.48			0.48	
2000900	5280						1.46			1.46				1.46		1.10	0.36	
2000930	5280						0.77			0.77				0.77			0.77	
2079005	5320						1.11			1.11				1.11		1.11		
2079010	5320						0.90			0.90				0.90			0.90	
2079010	5330						0.01			0.01				0.01			0.01	
2079200	5320						0.39			0.39				0.39			0.39	
2079300	5320						0.86			0.86				0.86		0.86		
2079310	5320						1.38			1.38				1.38		1.38		
2080010	5330						0.91			0.91				0.91		0.91		
2080100	5330						0.93			0.93				0.93		0.93		
2080805	5330						1.17			1.17				1.17		0.35	0.82	
2084015	5300						1.92			1.92				1.92		1.90	0.01	
2084016	5300						0.40			0.40				0.40		0.34	0.06	
2085150	5290						0.30			0.30				0.30			0.30	
2086100	5270						0.86			0.86				0.86		0.86		
2086100	5290						0.45			0.45				0.45		0.45		
2086130	5270						0.33			0.33				0.33		0.33		
2086140	5270						0.52			0.52				0.52		0.52		
2087100	5290						2.00			2.00				2.00		1.40	0.59	
2087105	5290						0.46			0.46				0.46		0.46		
2087110	5290						0.66			0.66				0.66		0.66		



Road Number	VCU	Alternative					GIS* Length	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	1	2	3
2087120	5290						0.67			0.67				0.67			0.67	
2087130	5290						0.84			0.84				0.84		0.84		
2092050	5270						0.12			0.12				0.12			0.12	
2092600	5270						0.50			0.50				0.50			0.50	
2710200	5380						1.18			1.18				1.18		1.18		
2710300	5380						0.78			0.78				0.78		0.78		
2710310	5380						0.66			0.66				0.66		0.66		
2720100	5380						1.36			1.36				1.36		0.59	0.77	
2720105	5380						1.37			1.37				1.37			1.37	
2720106	5380						0.49			0.49				0.49			0.49	
2720150	5380						0.91			0.91				0.91			0.91	
2720210	5380						0.01			0.01				0.01			0.01	
2720400	5380						0.22			0.22				0.22			0.22	
2720700	5380						0.19			0.19				0.19		0.19		
2730100	5344						0.09			0.09				0.09			0.09	
2730100	5380						0.56			0.56				0.56			0.56	
2730200	5340						0.03			0.03				0.03			0.03	
2730200	5380						1.33			1.33				1.33			1.33	
2730210	5380						0.70			0.70				0.70			0.70	
2730220	5340						0.73			0.73				0.73			0.73	
2900210	5311						0.59	0.18		0.40		0.18		0.40		0.59		
2900350	5311						0.62			0.62				0.62		0.62		
2900400	5311						0.48			0.48				0.48		0.48		
2900500	5280						1.13			1.13				1.13		0.87	0.26	
2920100	5311						0.63	0.63				0.63				0.63		
2920100	5360						0.90	0.90				0.9				0.90		
2931100	5311						1.85			1.85				1.85		1.85		
2931100	5313						0.35			0.35				0.35		0.35		
3000540	5400						0.67			0.67				0.67		0.62	0.05	
3000541	5400						0.28			0.28				0.28			0.28	
3000550	5390						1.66			1.66				1.66		1.66		
3000550	5400						0.26			0.26				0.26		0.26	0.00	
3000551	5400						1.57			1.57				1.57		1.42	0.16	

Road Number	VCU	Alternative					GIS* Length	Road Class			Traffic Service Level				Road Maintenance			
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	1	2	3
3000556	5390						1.04			1.04				1.04			1.04	
3000560	5390						1.86			1.86				1.86			0.77	1.09
3000566	5390						0.47			0.47				0.47			0.47	
3000570	5350						0.14			0.14				0.14			0.14	
3000570	5390						1.38			1.38				1.38			1.38	
3000572	5390						0.84			0.84				0.84			0.84	
3000574	5390						0.07			0.07				0.07			0.07	
3000575	5390						0.30			0.30				0.30			0.30	
3000578	5350						1.54			1.54				1.54			1.54	
3000585	5350						0.39			0.39				0.39			0.39	
3000590	5350						0.84			0.84				0.84				0.84
3000592	5350						0.62			0.62				0.62				0.62
3000600	5342						0.04			0.04				0.04				0.04
3000600	5344						0.94			0.94				0.94				0.94
3070100	5400						1.21			1.21				1.21			1.21	
3070110	5400						0.37			0.37				0.37			0.37	
3075600	5390						0.20			0.20				0.20				0.20
3075603	5350						0.55			0.55				0.55				0.55
3075603	5390						1.82			1.82				1.82				1.82
Misc.	5270						7.30	0.16	2.24	4.89		0.16	2.24	4.89		1.30	3.69	2.302
Misc.	5280						5.71	0.20	0.84	4.67		0.2	0.84	4.67		1.62	3.06	1.038
Misc.	5281						0.42			0.42				0.42			0.42	
Misc.	5290						11.03	0.21	2.92	7.91		0.21	2.92	7.91		4.41	3.63	2.991
Misc.	5300						5.53	0.64	1.57	3.32		0.64	1.57	3.32		1.77	1.78	1.981
Misc.	5311						12.11	1.00	0.02	11.09		1	0.02	11.09		11.67	0.42	0.018
Misc.	5313						0.10			0.10				0.10		0.10		
Misc.	5320						15.67	0.52	0.32	14.83		0.52	0.32	14.83		11.65	3.41	0.61
Misc.	5330						6.84		2.27	4.57			2.27	4.57		5.69	1.15	
Misc.	5340						11.31	0.05	0.91	10.36		0.05	0.91	10.36		5.22	6.05	0.047
Misc.	5341						1.02			1.02				1.02		1.02		
Misc.	5344						4.21			4.21				4.21		0.27	3.94	
Misc.	5350						5.17	0.27		4.90		0.27		4.90		1.89	3.01	0.27
Misc.	5360						4.52	0.64	0.61	3.28		0.64	0.61	3.28		4.45	0.07	

Road Number	VCU	Alternative					GIS* Length	Road Class				Traffic Service Level				Road Maintenance		
		2	3	4	5	6		Arterial	Collector	Local	Temp	A	B	C	D	1	2	3
Misc.	5371						4.48	0.04	0.08	4.36		0.04	0.08	4.36		0.50	3.93	0.044
Misc.	5380						15.61	0.14		15.47		0.14		15.47		7.27	8.19	0.141
Misc.	5390						10.61	0.04	1.28	9.28		0.04	1.28	9.28		4.68	4.60	1.326
Misc.	5400						2.43		0.30	2.12			0.3	2.12		1.39	0.73	0.304
2000864SPUR	5290						0.27			0.27				0.27		0.27		
2086SPUR	5290						0.88			0.88				0.88		0.88		
27SPUR	5380						0.93			0.93				0.93		0.77	0.16	
2931100SPUR1	5311						0.10			0.10				0		0.10		
2931100SPUR2	5311						0.10			0.10				0.10		0.10		
FH 43	5320						1.69	1.69				1.69						1.686
FH 43	5330						4.15	4.15				4.15						4.148
FH 43	5340						1.45	1.45				1.45						1.453
FH 43	5371						2.93	2.93				2.93						2.932
FH 43	5380						0.18	0.18				0.18						0.183
FH 45	5380						3.03	2.98		0.05		2.98		0.05		0.05		2.979





# **Appendix J**

- J-1 Deer Harvest by Community**
- J-2 Marten and Black Bear  
Harvest by Community**
- J-3 Cumulative Effects by WAA**
- J-4 TRUCs Maps**
- J-5 Deer Harvest Statistics**

# Abstract

Introduction	1
1.1 Background	1
1.2 Objectives	2
2. Methodology	3
2.1 Data Collection	3
2.2 Analysis	4
3. Results	5
3.1 Descriptive Statistics	5
3.2 Inferential Statistics	6
4. Discussion	7
4.1 Interpretation	7
4.2 Implications	8
5. Conclusion	9



## **J-1    Deer Harvest by Community**



# **SUMMARY DEER HARVEST STATISTICS**

## **LAB BAY STUDY AREA**

### **BY COMMUNITY, YEAR, AND WAA**

Based on Alaska Department of Fish and Game  
Annual Hunter Survey Information, 1988-1991





Coffman Cove, Summary Deer Harvest (1988 - 1991)

WAA	Year				4 Year Total	4 Year Harvest	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	2	0	0	4	12	3	2.8%	139	8.6%
1528	4	0	0	0	4	1	0.9%	170	2.4%
1529	0	0	0	0	0	0	0.0%	770	0.0%
1530	9	33	23	0	65	16.3	15.3%	699	9.3%
Other	103	87	88	67	345	86.3	81.0%	56058	0.6%
TOTAL	118	126	111	71	426	106.5	100.0%	57836	0.7%

Craig, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	9	0	0	0	9	2.3	6.4%	139	8.6%
1528	0	0	0	0	9	2.3	6.4%	170	5.3%
1529	44	13	25	64	146	36.5	6.4%	770	19.0%
1530	26	0	6	0	32	8	1.4%	699	4.6%
Other	509	557	603	413	2082	520.5	91.4%	56058	3.7%
TOTAL	597	570	634	477	2278	569.5	100.0%	57836	3.9%

Edna Bay, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1529	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	0	0	0	0	0.0%	770	0.0%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	83	38	62	74	257	64.3	100.0%	56058	0.5%
TOTAL	83	38	62	74	257	64.3	100.0%	57836	0.4%



Ketchikan, Summary Deer Harvest (1988 - 1991)

Hollis, Summary Deer Harvest (1988 - 1991)									
WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.6%
1529	0	0	5	0	5	1.3	6.0%	770	0.6%
1530	0	1	3	1	5	1.3	6.0%	699	0.7%
Other	25	5	27	16	73	18.3	88.0%	56058	0.1%
<b>TOTAL</b>	<b>25</b>	<b>6</b>	<b>35</b>	<b>17</b>	<b>83</b>	<b>20.8</b>	<b>100.0%</b>	<b>57836</b>	<b>0.1%</b>

Hydaburg, Summary Deer Harvest (1988 - 1991)									
WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.6%
1528	0	0	0	0	0	0	0.0%	170	0.6%
1529	0	0	3	0	3	0.8	2.1%	770	0.4%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	56	30	39	17	142	35.5	97.9%	56058	0.3%
<b>TOTAL</b>	<b>56</b>	<b>30</b>	<b>42</b>	<b>17</b>	<b>145</b>	<b>36.3</b>	<b>100.0%</b>	<b>57836</b>	<b>0.3%</b>

Juneau, Summary Deer Harvest (1988 - 1991)									
WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	0	0	0	0	0.0%	770	0.0%
1530	6	0	0	0	6	1.5	0.0%	699	0.9%
Other	3992	3761	4213	2871	14837	3709.3	100.0%	56058	26.5%
<b>TOTAL</b>	<b>3998</b>	<b>3761</b>	<b>4213</b>	<b>2871</b>	<b>14843</b>	<b>3710.8</b>	<b>100.0%</b>	<b>57836</b>	<b>25.7%</b>



Metlakatla, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	7	31	38	9.5	0.6%	139	27.3%
1528	0	0	7	0	7	1.8	0.1%	170	4.1%
1529	0	20	127	61	208	52	3.4%	770	27.0%
1530	91	51	71	61	274	68.5	4.5%	699	39.2%
Other	1549	1473	1526	1036	5584	1396	91.4%	56058	10.0%
TOTAL	1640	1544	1738	1189	6111	1527.8	100.0%	57836	10.6%

Klawock, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	11	0	9	19	39	9.8	3.4%	139	28.1%
1528	0	21	0	0	21	5.3	1.8%	170	12.4%
1529	0	28	36	0	64	16	5.6%	770	8.3%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	239	190	250	347	1026	256.5	89.2%	56058	1.8%
TOTAL	250	239	295	366	1150	287.5	100.0%	57836	2.0%

Labouchere Bay, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	1	0	0	1	0.3	0.6%	139	0.7%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	24	47	64	17	152	38	91.6%	770	19.7%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	0	1	12	0	13	3.3	7.8%	56058	0.0%
TOTAL	24	49	76	17	166	41.5	100.0%	57836	0.3%

Other Alaska, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	5	0	0	5	1.3	3.4%	139	3.6%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	0	6	6	1.5	4.1%	770	0.8%
1530	3	0	0	0	3	0.8	2.0%	699	0.4%
Other	40	33	34	29	136	34	91.9%	56058	0.2%
TOTAL	43	38	32	35	148	37	100.0%	57836	0.3%

Meyers Chuck, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	0	0	0	0	0.0%	770	0.0%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	18	17	17	14	66	16.5	100.0%	56058	0.1%
TOTAL	18	17	17	14	66	16.5	100.0%	57836	0.1%

Naukati Camp, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	0	0	0	0	0.0%	770	0.0%
1530	0	0	0	6	6	1.5	5.2%	699	0.9%
Other	13	21	48	27	109	27.3	94.8%	56058	0.2%
TOTAL	13	21	48	33	115	28.8	100.0%	57836	0.2%



Point Baker, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	139	0.0%	
1528	0	0	0	0	0	0	170	0.0%	
1529	0	0	0	0	0	0	770	0.0%	
1530	0	5	0	0	5	1.3	699	0.7%	
Other									
TOTAL	0	5	0	0	5	1.3	1778	0.3%	

Outside of Alaska, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	139	0.0%	
1528	16	0	0	5	15	3.8	170	8.8%	
1529	5	0	0	2	7	1.8	770	0.9%	
1530	0	0	0	0	0	0	699	0.0%	
Other	39								
TOTAL	15	0	0	46	61	15.3	1778	3.4%	

Petersburg, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	16	0	0	0	16	4	0.4%	139	11.5%
1528	16	23	5	11	55	13.8	1.2%	170	32.4%
1529	21	28	20	0	69	17.3	1.5%	770	9.0%
1530	5	14	0	0	19	4.8	0.4%	699	2.7%
Other	1122	1037	1509	631	4299	1074.8	96.4%	56058	7.7%
TOTAL	1180	1102	1534	642	4458	1114.5	100.0%	57836	7.7%



**Thorne Bay, Summary Deer Harvest (1988 - 1991)**

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	5	0	0	0	5	1.3	6.6%	139	3.6%
1528	0	0	8	0	8	2	10.5%	170	4.7%
1529	18	21	6	4	49	12.3	64.5%	770	6.4%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	6	6	2	0	14	3.5	18.4%	56058	0.0%
<b>TOTAL</b>	<b>29</b>	<b>27</b>	<b>16</b>	<b>4</b>	<b>76</b>	<b>19</b>	<b>100.0%</b>	<b>57836</b>	<b>0.1%</b>

**Port Protection, Summary Deer Harvest (1988 - 1991)**

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	0	0	16	0	16	4	100.0%	770	2.1%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	0	0	0	0	0	0	0.0%	56058	0.0%
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>100.0%</b>	<b>57836</b>	<b>0.0%</b>

**Skowl Arm/Polk, Summary Deer Harvest (1988 - 1991)**

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	0	0	0	0	0.0%	139	0.0%
1528	0	0	0	0	0	0	0.0%	170	0.0%
1529	8	0	0	0	8	2	9.1%	770	1.0%
1530	0	0	0	0	0	0	0.0%	699	0.0%
Other	29	15	24	12	80	20	90.9%	56058	0.1%
<b>TOTAL</b>	<b>37</b>	<b>15</b>	<b>24</b>	<b>12</b>	<b>88</b>	<b>22</b>	<b>100.0%</b>	<b>57836</b>	<b>0.2%</b>

1527	0	0	6	0	6	1.5	0.4%	139	4.3%
1528	0	7	0	0	7	1.8	0.5%	170	4.1%
1529	5	0	0	0	5	1.3	0.4%	770	0.6%
1530	0	0	6	0	6	1.5	0.4%	699	0.9%
Other	309	342	428	291	1370	342.5	98.3%	56058	2.4%
TOTAL	314	349	440	291	1394	348.5	100.0%	57836	2.4%

Whale Pass, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1527	0	0	5	3	8	2	4.9%	139	5.8%
1528	0	0	2	7	9	2.3	4.9%	170	5.3%
1529	3	0	5	3	11	2.8	6.0%	770	1.4%
1530	25	31	14	19	89	22.3	48.9%	699	12.7%
Other	5	33	17	10	65	16.3	35.7%	56058	0.1%
TOTAL	33	64	43	42	182	45.5	100.0%	57836	0.3%

Wrangell, Summary Deer Harvest (1988 - 1991)

WAA	YEAR				4 Year Total	4 Year Average	% of Community Harvest	4 Year WAA Harvest	Com. Harvest as % of WAA
	1988	1989	1990	1991					
1529	0	0	0	0	0	0	0.0%	139	0.0%
1528	24	0	11	0	35	8.8	2.6%	170	20.6%
1529	18	0	0	0	18	4.5	1.3%	770	2.3%
1530	36	61	92	0	189	47.3	14.1%	699	27.0%
Other	283	325	224	262	1094	273.5	81.9%	56058	2.0%
TOTAL	361	386	327	262	1336	334	100.0%	57836	2.3%





**MARTEN AND BLACK BEAR HARVEST STATISTICS**  
**LAB BAY STUDY AREA**  
**BY COMMUNITY, YEAR, AND WAA**

Based on Alaska Department of Fish and Game  
Annual Hunter Survey Information, 1987-1991



Marten Harvest, Lab Bay Project Area, 1988/89 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ketchikan	19				19	197	216
Meyers Chuck	1				1	0	1
Wrangell		7			7	0	7
Subsistence	1	7	-	-	8		
Non-Subsistence	19	-	-	-	19		

Marten Harvest, Lab Bay Project Area, 1989/90 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Craig	3				3	154	157
Ketchikan	24				24	205	229
Point Baker			49		49	0	49
Wrangell		23			23	1	24
Total	27	23	49	0	99	360	459
Subsistence	3	23	49	-	75		
Non-subsistence	24	-	-	-	24		

Marten Harvest, Lab Bay Project Area, 1990/91 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ketchikan				39	39	75	114
Point Baker			5		5	0	5
Wrangell		12			12	14	26
Total	-0	12	5	39	56	89	145
Subsistence	-	12	5	-	17		
Non-Subsistence	-	-	-	39	39		



**Black Bear Harvest, Lab Bay Project Area, 1980/81 Season**

Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ketchikan	3		2		5	23	28
Labouchere Bay			1		1	0	1
Petersburg	1				1	0	1
Thorne Bay	1				1	4	5
Tillamook			1		1	1	2
Whale Pass	1				1	0	1
Wrangell			3		3	0	3
Other Alaska					0	13	13
Non-Alaska USA					0	32	32
Outside USA					0	0	0
Total	6	0	7	0	13	73	86
Subsistence	3	-	5	-	8		
Non-Subsistence	3	-	2	-	5		

Black Bear Harvest, Lab Bay Project Area, 1981/82 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ketchikan	5				5	33	38
Port Alice	1				1	0	1
Thirne Bay	2				2	7	9
Tok			1		1	0	1
Whale Pass	1				1	0	1
Wrangell			1		1	0	7
Other Alaska					0	18	18
Non-Alaska USA					0	20	20
Outside USA					0	9	9
Total	9	0	2	0	11	93	104
Subsistence	4	-	2	-	4		
Non-subsistence	5	-	2	-	7		

Black Bear Harvest, Lab Bay Project Area, 1982/83 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1529	1529	1530			
Homer	1				4	0	1
Ketchikan	8				8	23	31
Whale Pass	1				1	0	1
Other Alaska					4	36	36
Non-Alaska USA	4	1			5	22	27
Outside USA		2	2		4	0	4
Total	14	3	2	0	19	81	100
Subsistence	-	-	-	1	2		
Non-Subsistence	12	3	2	-	17		



Black Bear Harvest, Lab Bay Project Area, 1983/84 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Craig			1		4	12	13
Ketchikan	6	1	2		9	25	34
Klawock	1				1	2	3
Thorne Bay	4				4	7	11
Wrangell		1			1	0	-
Other Alaska					9	13	13
Non-Alaska USA	3	1			4	41	45
Outside USA					0	0	-
Total	14	3	3	0	20	100	120
Subsistence	11	2	3	-	16		
Non-Subsistence	3	1	-	-	4		

Black Bear Harvest, Lab Bay Project Area, 1984/85 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Anchorage	1				1	5	6
Craig	4				0	7	11
Juneau	1				1	1	2
Ketchikan	3				3	20	23
Klawock	1		1		2	1	3
Petersburg	2				2	0	2
Sitka	1				1	0	1
Ward Cove	2				2	1	3
Wrangell		1			1	0	1
Other Alaska					0	18	18
Non-Alaska USA			1		1	15	16
Outside USA					0	4	4
Total	15	1	2	0	18	72	90
Subsistence	10	1	1	-	12		
Non-Subsistence	5	-	1	-	6		

Black Bear Harvest, Lab Bay Project Area, 1985/86 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Fairbanks			1		1	3	4
Ketchikan	10				10	29	39
Kodiak	1				1	2	3
Petersburg		1			1	1	2
Thorne Bay	1				1	15	16
Token	1				1	3	4
Ward Cove			1		1	5	6
Whale Pass	1				1	0	1
Wrangell	1				1	2	3
Other Alaska					0	47	47
Non-Alaska USA	3				3	43	46
Outside USA					0	3	3
Total	18	1	2	0	21	153	174
Subsistence	5	1	2	-	8		
Non-Subsistence	13	-	-	-	13		



Black Bear Harvest, Lab Bay Project Area, 1986/87 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Craig	1				1	19	20
Juneau	2				2	1	-
Ketchikan	4		5		9	13	22
Klawock	1				1	13	14
Kodiak	2				2	3	5
Thorne Bay	1				1	7	8
Whale Pass	1				1	0	1
Wrangell		1	2		3	2	5
Other Alaska					0	21	21
Non-Alaska USA	4	1	1		6	49	55
Outside USA					0	0	-
Total	16	2	8	0	26	128	154
Subsistence	6	1	2	-	9		
Non-Subsistence	10	1	6	-	17		

Black Bear Harvest, Lab Bay Project Area, 1987/88 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Craig	2		1		3	13	16
Ketchikan	9				9	13	22
Palmer	1				1	0	1
Petersburg	1				1	0	1
Sitka			2		2	2	4
Ward Cove	3				3	1	4
Whale Pass	1				1	0	1
Wrangell	1	1			2	0	2
Other Alaska					0	36	36
Non-Alaska USA	5		4		9	52	61
Outside USA					0	6	6
Total	23	1	7	0	31	123	154
Subsistence	9	1	3	-	13		
Non-Subsistence	14	-	4	-	18		

Black Bear Harvest, Lab Bay Project Area, 1988/89 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ketchikan	5				5	22	27
Metlakatla			2		2	1	3
Palmer	1		1		2	1	3
Petersburg	2				2	1	3
Thorne Bay	1				1	10	11
Ward Cove	3				3	1	9
Whale Pass	2				2	0	2
Other Alaska					0	29	29
Non-Alaska USA	5				5	115	120
Outside USA					0	9	9
Total	19	0	3	0	22	189	211
Subsistence	9	-	3	-	12		
Non-Subsistence	10	-	-	-	10		



Black Bear Harvest, Lab Bay Project Area, 1989/90 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Fairbanks			1		1	0	1
Fort Wainwright			1		1	2	3
Ketchikan	1				1	17	18
Klawock			2		2	6	5
Ward Cove	1				1	4	5
Wrangell					0	3	3
Other Alaska		1			1	51	52
Non-Alaska USA	3	3	2	2	10	117	127
Outside USA					0	5	5
Total	5	4	6	2	17	205	222
Subsistence	1	1	2	-	4		
Non-Subsistence	4	3	4	2	13		

Black Bear Harvest, Lab Bay Project Area, 1990/91 Season							
Community	WAA				Project Area Total	Outside Project Area	TOTAL Harvest
	1527	1528	1529	1530			
Ambler				1	1	0	1
Anchorage			1		1	4	5
Douglas			2		2	0	2
Fairbanks	2			4	6	2	8
Ketchikan	1		3		4	25	29
Klawock	1		2		3	12	15
Naukati				1	1	1	2
Thorne Bay	1				1	12	13
Ward Cove	3				3	5	8
Whale Pass				1	1	0	1
Other Alaska					0	25	25
Non-Alaska USA	2		9	6	16	73	89
Outside USA					0	7	7
Total	10	0	16	13	39	166	205
Subsistence	5	-	2	3	10		
Non-Subsistence	5	-	14	10	29		

## **J-3 Cumulative Effects by WAA**





**CUMULATIVE EFFECTS TABLES  
HCM PROJECTIONS THROUGH TIME  
FOR WAA USE AREAS  
FOR LAB BAY STUDY COMMUNITIES**

Based on Proposed Revised TLMP  
WWA HCM Projections





WAA Land Use Groupings, Coffman Cove Average Deer Harvest (1988-1991) and Habitat Capability Model Results										
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest		
			Com	WAAs				Subsistence	Non- Subsistence	
AI.L	100	408,1108,1315,1319,1420,1421, 1422,1527,1528,1530,1906,9999	107	1419	2332	2207	1620	65	35	
MAIN	86	1420,1421,1530	92	506	597	551	372	54	46	
LOW	14	408,1108,1315,1319,1422,1527, 1528,1906,9999	15	913	1735	1656	1248	71	29	
CORE	71	1420,1421	76	331	411	378	233	51	49	
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 3.4% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.										

WAA Land Use Groupings, Craig Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	408,901,902,1003,1105,1107,1214, 1315,1316,1317,1318,1319,1323, 1332,1421,1422,1525,1526,1527, 1528,1529,1530,1531	570	2471	6257	5954	4347	70	30
MAIN	90	1003,1316,1317,1318,1319,1323, 1332,1421,1422,1529,1531	512	1803	2689	2496	1679	72	28
LOW	10	408,901,902,1105,1107,1214,1315, 1525,1526,1527,1528,1530	58	668	3568	3459	2669	65	35
CORE	78	1003,1318,1319,1323,1421,1422, 1529,1531	446	1611	1954	1838	1183	72	28
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 4.6% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Hollis  
Average Deer Harvest (1988-1991) and Habitat Capability Model Results

Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non-Subsist
ALL	100	902,1211,1214,1315,1316,1317,1318,1421,1422,1529,1530	21	1662	2863	2760	2037	66	34
MAIN	93	1211,1315,1316,1317,1318,1421,1529,1530	19	1251	1618	1511	1052	68	32
LOW	7	902,1214,1422	2	411	1246	1249	986	60	40
CORE	66	1211,1315,1316,1317	14	315	695	670	471	57	43

ALL includes all WAAs for which there is documented deer harvest from this community.

MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken.

LOW includes those WAAs included in ALL but not in MAIN.

CORE includes those individual WAAs from which 9.6% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information.

1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.



WAA Land Use Groupings, Hydaburg Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non-Subsist
ALL	100	901,1107,1317,1318,1319,1323,1332,1420,1421,1422,1529	40	1772	3071	2922	2038	72	28
MAIN	88	901,1107,1319,1332,1420,1421,1422	36	1035	2333	2268	1557	66	35
LOW	12	1317,1318,1323,1529	5	738	737	654	481	81	19
CORE	67	901,1107,1332,1420	27	218	1299	1269	934	62	38
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes those WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes that group of WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 14.3% or more of this community's total documented deer harvest was taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									

**WAA Land Use Groupings, Ketchikan  
Average Deer Harvest (1988-1991) and Habitat Capability Model Results**

Name	Percent of Com Harvest	WAAs	Average Deer Harvest		1990 HCM	2000 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non-Subsist
ALL	100	101,202,404,406,407,408,509,510,612,613,614,901,902,1003,1105,1106,1107,1108,1209,1210,1211,1212,1213,1214,1315,1316,1317,1318,1319,1323,1332,1420,1421,1422,1525,1526,1527,1528,1529,1530,1531,1707,1817,1901,1910,2722,3001,3002,3104,3308,3309,3311,3313,3314,3315,3418,3524,3525,3627,3629,3630,3731,3835,3836,3938,3940,4043,4145,4150,4222	1509	5469	14807	13945	11615	59	41
MAIN	90	101,406,407,408,509,510,612,613,901,1003,1106,1107,1211,1212,1214,1315,1316,1317,1318,1319,1323,1420,1421,1422,1526,1529,1530,1817,1910,3308,3315,3731,3940	1358	3511	7339	7084	5621	60	40
LOW	10	202,404,614,902,1105,1108,1209,1210,1213,1332,1525,1527,1528,1531,1707,1901,2722,3001,3002,3104,3309,3311,3313,3314,3418,3524,3525,3627,3629,3630,3835,3836,3938,4043,4145,4150,4222	151	1958	7468	6861	5995	58	42
CORE	68	101,406,407,408,509,613,1003,1106,1211,1214,1319,1420,1421,1422,1529,1530	1023	2020	3220	3095	2298	49	51
SUPER CORE	42	101,406,407,613,1211,1421,1422,1530	634	1075	1884	1860	1442	39	61

ALL includes all WAAs for which there is documented deer harvest from this community.

MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken.

LOW includes those WAAs included in ALL but not in MAIN.

CORE includes those individual WAAs from which 3% or more of this community's total documented deer harvest has been taken.

SUPER CORE includes those individual WAAs from which 3.9% or more of the community documented deer harvest was taken.

Documented deer harvest statistics are based on ADF&G hunter survey information.

1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.



WAA Land Use Groupings, Klawock Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	902,1003,1107,1315,1317,1318, 1319,1323,1332,1421,1422,1526, 1527,1528,1529,3526,3627,3629	288	2456	4828	4553	3429	66	34
MAIN	91	1317,1318,1319,1323,1421,1422, 1527,1528,1529	261	1632	1982	1826	1254	74	26
LOW	9	902,1003,1107,1315,1332,1526, 3526,3627,3629	27	825	2846	2727	2175	50	50
CORE	74	1318,1319,1323,1422	212	1091	1105	1065	688	78	22
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 8.7% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Labouchere Bay Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAA's	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAA's				Subsistence	Non- Subsist
ALL	100	1422,1524,1527,1529,1531	42	572	1199	1046	760	69	31
MAIN	92	1529	38	193	250	194	159	72	28
LOW	8	1422,1524,1527,1531	4	380	949	853	601	68	32
CORE	92	1529	38	193	250	194	159	72	28
ALL includes all WAA's for which there is documented deer harvest from this community. MAIN includes that group of WAA's from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAA's included in ALL but not in MAIN. CORE includes those individual WAA's from which 92% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									

WAA Land Use Groupings, Metlakatla Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2004 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	101,202,303,1210,1211,1214,1316, 1318,1319,1422,1527,1529,1530	38	1730	2660	2539	1887	66	34
MAIN	91	101,202,303,1210,1316,1422,1527, 1529	34	725	1615	1519	1209	57	43
LOW	9	1211,1214,1318,1319,1530	4	1005	1045	1020	678	72	28
CORE	71	202,303,1210	27	46	472	472	396	60	40
<p>ALL includes all WAAs for which there is documented deer harvest from this community.</p> <p>MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken.</p> <p>LOW includes those WAAs included in ALL but not in MAIN.</p> <p>CORE includes those individual WAAs from which 10% or more of this community's total documented deer harvest has been taken.</p> <p>Documented deer harvest statistics are based on ADF&amp;G hunter survey information.</p> <p>1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.</p> <p>Note: TLMP provides no HCM value for WAA 202, so a value of 0 was used. This obviously makes the overall HCM figures for ALL, MAIN, and CORE minimum values that could well actually be higher.</p>									



WAA Land Use Groupings, Naukati Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	1003,1323,1422,1530,1531	29	761	1380	1284	853	65	35
MAIN	90	1323,1422,1531	104	469	902	826	562	69	31
LOW	10	1003,1530	3	292	478	458	291	59	41
CORE	63	1422	18	301	441	439	258	64	36
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 62% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Petersburg Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	1003,1315,1318,1319,1323,1420,1421,1422, 1524,1525,1526,1527,1528,1529,1530,1531, 1601,1602,1603,1605,1706,1707,1901,1904, 1905,2007,2008,2926,3001,3308,3309,3310, 3311,3312,3313,3315,3523,3525,3551,3731, 3732,3733,3734,3835,3938,3939,3940,4041, 4055,4145,4146,4147,4148,4149,4253,9999	1114	7944	9695	8957	7346	69	31
MAIN	89	1323,1420,1526,1528,1529,1605,1706,1904, 2007,3308,3309,3313,3315,3731,3732,3733, 3938,3939,3940,4055,4145,4148,4253	997	3233	3863	3614	3267	71	29
LOW	11	1003,1315,1318,1319,1421,1422,1524,1525, 1527,1530,1531,1601,1602,1603,1707,1901, 1905,2008,2926,3001,3310,3311,3312,3523, 3525,3551,3734,3835,4041,4146,4147,4149, 9999	118	4711	5832	5343	4079	67	33
CORE	69	1605,2007,3315,3731,3938,3939,3940	764	1322	1472	1435	1327	81	19
<p>ALL includes all WAAs for which there is documented deer harvest from this community.</p> <p>MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken.</p> <p>LOW includes those WAAs included in ALL but not in MAIN.</p> <p>CORE includes those individual WAAs from which 3.5% or more of this community's total documented deer harvest has been taken.</p> <p>Documented deer harvest statistics are based on ADF&amp;G hunter survey information.</p> <p>1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.</p>									

WAA Land Use Groupings, Point Baker Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2040 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	1323,1525,1526,1527,1528,1529	19	522	1176	1030	837	78	22
MAIN	87	1526,1528,1529	17	311	560	504	444	77	23
LOW	13	1323,1525,1527,	3	212	611	525	393	80	20
CORE	65	1529	12	193	250	159	159	72	28
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 64% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Port Protection Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAA's	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAA's				Subsistence	Non- Subsist
ALL	100	1529	4	193	250	194	159	72	28
MAIN	100	1529	4	193	250	194	159	72	28
LOW	100	1529	4	193	250	194	159	72	28
CORE	100	1529	4	193	250	194	159	72	28
ALL includes all WAA's for which there is documented deer harvest from this community. MAIN includes that group of WAA's from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAA's included in ALL but not in MAIN. CORE includes those individual WAA's from which 100% of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



**WAA Land Use Groupings, Saxman  
Average Deer Harvest (1988-1991) and Habitat Capability Model Results**

Name	Percent of Community Harvest	WAA's	Average Deer Harvest		1990 HCM	2040 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAA's				Subsistence	Non- Subsist
ALL	100	407,408,1211,1315,1319	7	558	949	913	647	58	43
MAIN	86	408,1315,1319	6	417	617	578	380	72	28
LOW	14	407,1211	1	141	331	335	267	9	91
CORE	86	408,1315,1319	6	417	617	578	380	72	28

ALL includes all WAA's for which there is documented deer harvest from this community.

MAIN includes that group of WAA's from which about 90% of this community's total documented deer harvest has been taken.

LOW includes those WAA's included in ALL but not in MAIN.

CORE includes those individual WAA's from which 24% or more of this community's total documented deer harvest has been taken.

Documented deer harvest statistics are based on ADF&G hunter survey information.

1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.

WAA Land Use Groupings, Skowl Arm/Polk Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAA's	Average Deer Harvest		1990 HCM	2004 HCM	2004 HCM	Percentage Harvest	
			Com	WAA's				Subsistence	WAA Deer Harvest
ALL	100	1212,1214,1317,1529	30	376	671	609	437	59	41
MAIN	88	1214	26	95	175	181	98	45	55
LOW	12	1212,1317,1529	4	281	496	429	340	64	36
CORE	88	1214	26	95	175	181	98	45	55
ALL includes all WAA's for which there is documented deer harvest from this community. MAIN includes that group of WAA's from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAA's included in ALL but not in MAIN. CORE includes those individual WAA's from which 88% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2004 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Thorne Bay Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non-Subsist
ALL	100	510,901,1003,1107,1214,1315,1316,1318,1319,1323,1420,1421,1422,1527,1528,1529,1530,3003,4147,5132	351	2750	4451	4219	3011	68	32
MAIN	90	1214,1315,1316,1318,1319,1420,1421,1422	317	1447	1859	1790	1102	70	30
LOW	10	510,901,1003,1107,1323,1527,1528,1529,1530,3003,4147,5132	34	1303	2592	2429	1909	67	33
CORE	77	1315,1319,1244	269	714	1011	970	591	73	27
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 11% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									



WAA Land Use Groupings, Whale Pass Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2040 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	1107,1316,1318,1319,1421,1422, 1526,1527,1528,1529,1530,4148	40	1956	3080	2934	2225	66	34
MAIN	90	1107,1318,1319,1421,1527,1528, 1529,1530	36	1348	2111	1971	1463	74	26
LOW	10	1316,1422,1526,4148	4	609	969	963	762	50	50
CORE	44	1530	18	175	186	174	139	59	41
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which 43% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									

WAA Land Use Groupings, Wrangell Average Deer Harvest (1988-1991) and Habitat Capability Model Results									
Name	Percent of Community Harvest	WAAs	Average Deer Harvest		1990 HCM	2004 HCM	2040 HCM	Percentage WAA Deer Harvest	
			Com	WAAs				Subsistence	Non- Subsist
ALL	100	1003,1316,1318,1319,1323,1420, 1421,1422,1525,1526,1528,1529, 1530,1531,1707,1810,1816,1901, 1902,1903,1904,1905,1906,1910, 3001,3002,3308,3311,3312,3314, 3525,3731,3733,3734,3938,3939, 3940,4041,5015	340	5926	7763	7247	5937	80	20
MAIN	89	1319,1526,1528,1529,1530,1810, 1903,1904,1905,1906,1910,3002, 3311,3731,3733,3734,3940	303	2489	3157	3007	2597	87	13
LOW	11	1003,1316,1318,1323,1420,1421, 1422,1526,1531,1707,1816,1901, 1902,3001,3308,3312,3314,3525, 3938,3939,4041,5015	36	3437	4606	4240	3341	75	25
CORE	73	1530,1903,1904,1905,1906,1910, 3733	249	510	1432	1407	1172	83	17
ALL includes all WAAs for which there is documented deer harvest from this community. MAIN includes that group of WAAs from which about 90% of this community's total documented deer harvest has been taken. LOW includes those WAAs included in ALL but not in MAIN. CORE includes those individual WAAs from which XX% or more of this community's total documented deer harvest has been taken. Documented deer harvest statistics are based on ADF&G hunter survey information. 1990 and 2040 HCM results are for the preferred alternative from TLMP 1991.									





## **J-4 TRUCs Maps**



# Craig TRUCS Map



## LEGEND: AREAS EVER HUNTED FOR DEER

Percent of Households	
gt 25%	gt 5% le 10%
ge 15% lt 25%	gt 1% le 5%
gt 10% le 15%	le 1%

0 1 2 3 4 5 MILES

Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey

CRAIG

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.

Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992

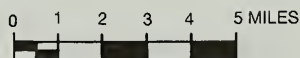
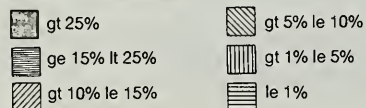


# Wrangell TRUCS Map



## LEGEND: AREAS EVER HUNTED FOR DEER

### Percent of Households



Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey  
**WRANGELL**

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.

Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992

Petersburg TRUCS Map



LEGEND: AREAS EVER HUNTED FOR DEER

Percent of Households

gt 25%	gt 5% le 10%
ge 15% lt 25%	gt 1% le 5%
gt 10% le 15%	le 1%

0 1 2 3 4 5 MILES

Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey

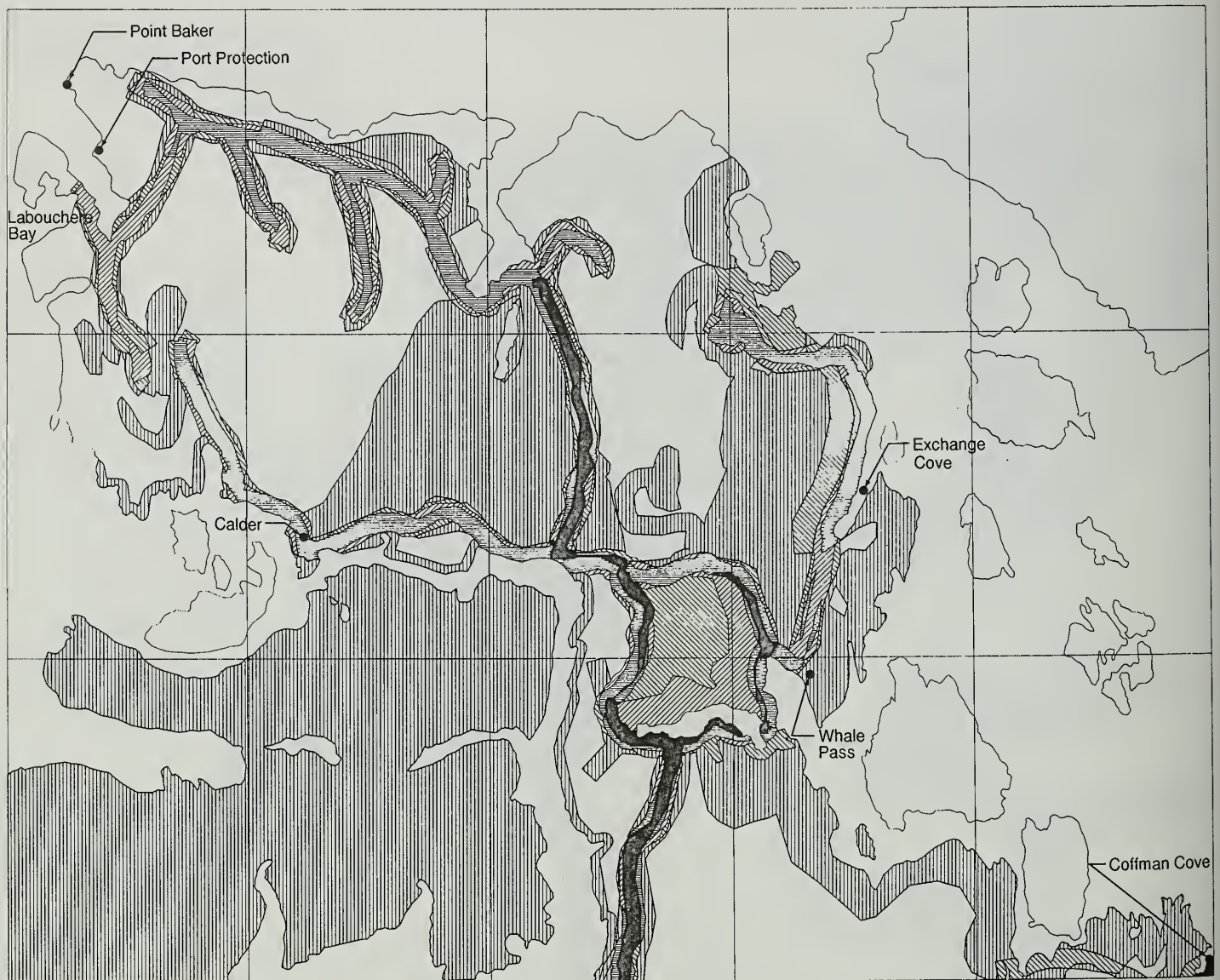
PETERSBURG

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.

Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992

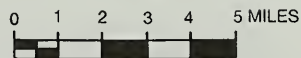
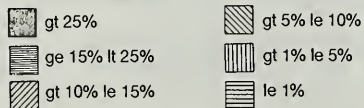


# Klawock TRUCS Map



## LEGEND: AREAS EVER HUNTED FOR DEER

Percent of Households



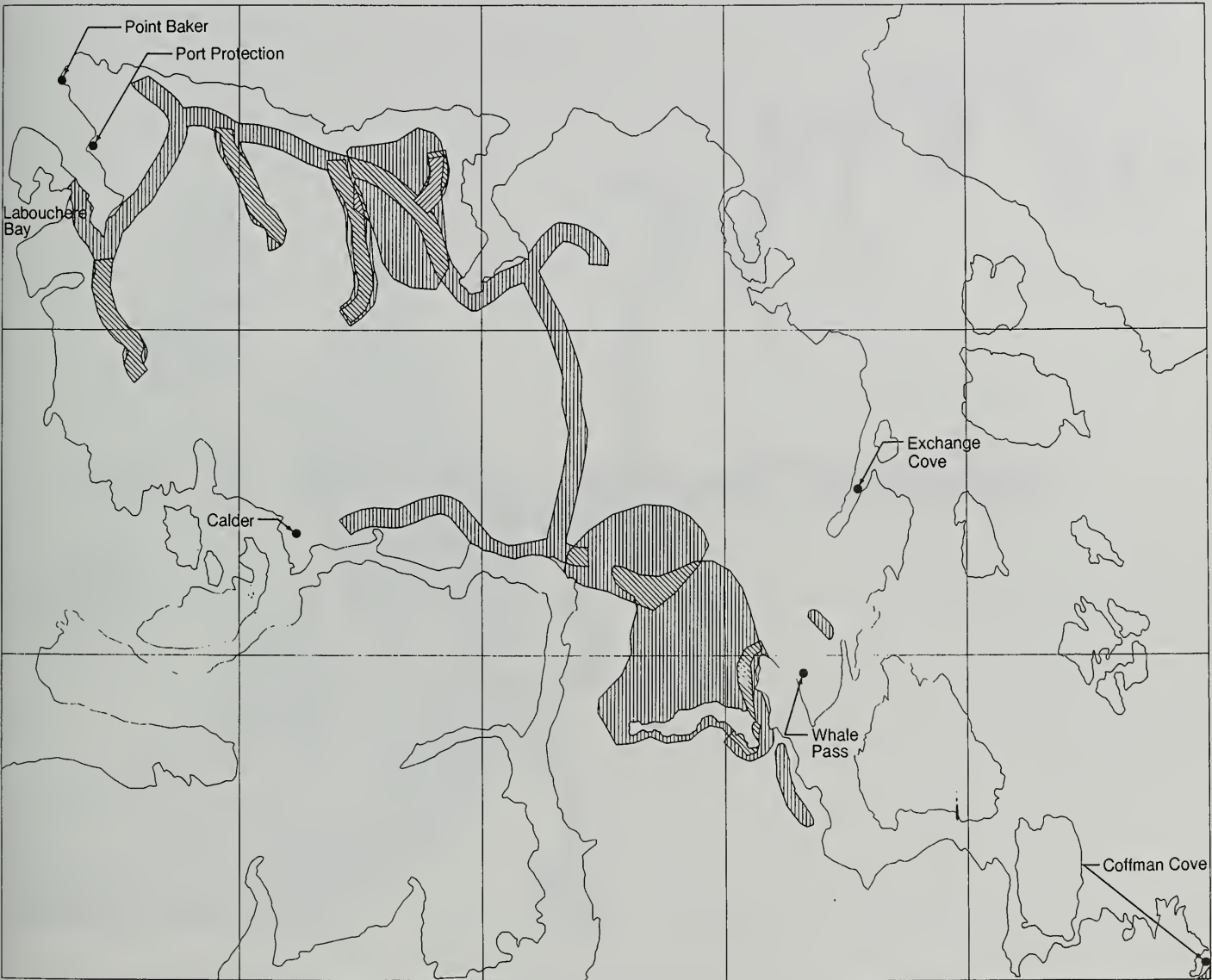
Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey  
**KLAWOCK**

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.

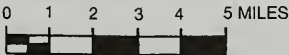
Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992



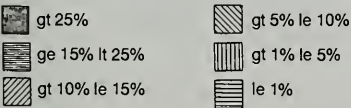
Hollis TRUCS Map



LEGEND: AREAS EVER HUNTED FOR DEER



Percent of Households



Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey  
HOLLIS

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.







Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992

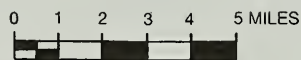
## Coffman Cove TRUCS Map



### LEGEND: AREAS EVER HUNTED FOR DEER

#### Percent of Households

 gt 25%	 gt 5% le 10%
 ge 15% lt 25%	 gt 1% le 5%
 gt 10% le 15%	 le 1%



Lab Bay Environmental Impact Study  
Tongass Resource Use Cooperative Survey

COFFMAN COVE

Grid is comprised of 7.5' quads from the 1:250,000 Petersburg Quadrangle. Shoreline is from the USFS 1:250,000 mapping, which is consistent with the base maps used in the collection of TRUCS data. The bold polygon outlines delineate areas mapped by two or less households in a given community.

Map Projection: Transverse Mercator  
Grid: Alaska Coordinate System 1927, Zone 6101  
Datum: NAD 27, Clarke 1866 ellipsoid  
Prepared by: Robert C. Wilkinson  
LGL Alaska Research Associates  
Date: July 14, 1992

## **J-5    Deer Harvest Statistics**





**DETAILED DEER HARVEST STATISTICS  
LAB BAY STUDY AREA  
BY COMMUNITY, YEAR, AND WAA**

Based on Alaska Department of Fish and Game  
Annual Hunter Survey Information, 1987-1991





Table Coffman1987

**Coffman Cove Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1319	2Z	15	9.15	285	5.26
1420	2Z	73	44.51	220	33.18
1421	2Z	42	25.61	539	7.79
1422	2Z	19	11.59	495	3.84
1527	2Z	15	9.15	416	3.61
Totals		164	100.01		

Table Coffman1988

**Coffman Cove Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1315	2Z	2	1.69	130	1.54
1319	2Z	2	1.69	242	0.83
1420	2Z	42	35.59	185	22.70
1421	2Z	38	32.20	329	11.55
1422	2Z	2	1.69	286	0.70
1527	2Z	2	1.69	43	4.65
1528	2Z	4	3.39	63	6.35
1530	2Z	9	7.63	201	4.48
1906	3Z	13	11.02	37	35.14
9999	NA	4	3.39	50	8.00
Totals		118	99.98		

Table Coffman1989 Coffman Cove Deer Harvest for 1989, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1108	2Z	6	4.76	6	100.00
1420	2Z	27	21.43	115	23.48
1421	2Z	48	38.10	224	21.43
1422	2Z	6	4.76	375	1.60
1527	2Z	6	4.76	12	50.00
1530	2Z	33	26.19	196	16.84
		126	100.00		

Table Coffman1990 Coffman Cove Deer Harvest for 1990, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
408	1A	2	1.80	68	2.94
1420	2Z	54	48.65	144	37.50
1421	2Z	30	27.03	118	25.42
1530	2Z	23	20.72	215	10.70
1906	3Z	2	1.80	18	11.11
		111	100.00		

Table Coffman1991 Coffman Cove Deer Harvest for 1991, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1420	2Z	22	30.99	38	57.89
1421	2Z	41	57.75	172	23.84
1422	2Z	4	5.63	237	1.69
1527	2Z	4	5.63	57	7.02
		71.00	100.00		

Table Craig1987

**Craig Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	7	0.92	52	13.46
902	2Z	7	0.92	7	100.00
1003	2Z	13	1.71	93	13.98
1107	2Z	20	2.63	43	46.51
1214	2Z	7	0.92	90	7.78
1315	2Z	7	0.92	235	2.98
1316	2Z	13	1.71	140	9.29
1317	2Z	53	6.96	122	43.44
1318	2Z	300	39.42	494	60.73
1319	2Z	33	4.34	285	11.58
1421	2Z	67	8.80	539	12.43
1422	2Z	127	16.69	495	25.66
1526	2Z	20	2.63	67	29.85
1527	2Z	20	2.63	416	4.81
1529	2Z	67	8.80	295	22.71
Totals		761	100.00		



Table Craig1988

**Craig Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	35	5.86	40	87.50
1003	2Z	26	4.36	126	20.63
1107	2Z	9	1.51	49	18.37
1316	2Z	26	4.36	77	33.77
1317	2Z	9	1.51	28	32.14
1318	2Z	149	24.96	346	43.06
1319	2Z	70	11.73	242	28.93
1321	2Z	18	3.02	76	23.68
1421	2Z	79	13.23	329	24.01
1422	2Z	70	11.73	286	24.48
1527	2Z	9	1.51	43	20.93
1528	2Z	9	1.51	63	14.29
1529	2Z	44	7.37	146	30.14
1530	2Z	26	4.36	201	12.94
1531	2Z	18	3.02	40	45.00
Totals		597	100.04		

Table Craig1989

**Craig Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
408	1A	7	1.23	58	12.07
901	2Z	7	1.23	18	38.89
902	2Z	13	2.28	20	65.00
1003	2Z	60	10.53	128	46.88
1315	2Z	7	1.23	92	7.61
1316	2Z	20	3.51	65	30.77
1317	2Z	60	10.53	74	81.08
1318	2Z	168	29.47	399	42.11
1319	2Z	7	1.23	195	3.59
1323	2Z	27	4.74	93	29.03
1332	2Z	7	1.23	23	30.43
1421	2Z	20	3.51	224	8.93
1422	2Z	134	23.51	375	35.73
1526	2Z	13	2.28	110	11.82
1529	2Z	13	2.28	157	8.28
1531	2Z	7	1.23	46	15.22
Totals		570	100.02		

Table Craig1990

**Craig Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	6	0.95	19	31.58
902	2Z	19	3.00	28	67.86
1003	2Z	19	3.00	82	23.17
1105	2Z	6	0.95	6	100.00
1214	2Z	6	0.95	124	4.84
1315	2Z	6	0.95	144	4.17
1316	2Z	13	2.05	31	41.94
1317	2Z	13	2.05	79	16.46
1318	2Z	248	39.12	429	57.81
1319	2Z	83	13.09	426	19.48
1323	2Z	45	7.10	101	44.55
1332	2Z	38	5.99	62	61.29
1422	2Z	51	8.04	307	16.61
1525	2Z	25	3.94	59	42.37
1529	2Z	25	3.94	310	8.06
1530	2Z	6	0.95	215	2.79
1531	2Z	25	3.94	52	48.08
Totals		634.00	100.01		



Table Craig1991

**Craig Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest From Community
1003	2Z	50	10.48	131	38.17
1214	2Z	7	1.47	83	8.43
1317	2Z	7	1.47	59	11.86
1318	2Z	150	31.45	258	58.14
1319	2Z	21	4.40	345	6.09
1323	2Z	57	11.95	238	23.95
1332	2Z	21	4.40	40	52.50
1421	2Z	7	1.47	172	4.07
1422	2Z	79	16.56	237	33.33
1525	2Z	14	2.94	68	20.59
1529	2Z	64	13.42	157	40.76
		477.00	100.01		

Table Hollis1987

**Hollis Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	4	4.55	93	4.30
1317	2Z	16	18.18	122	13.11
1318	2Z	12	13.64	494	2.43
1319	2Z	4	4.55	285	1.40
1420	2Z	20	22.73	220	9.09
1421	2Z	24	27.27	539	4.45
1422	2Z	4	4.55	495	0.81
1527	2Z	4	4.55	416	0.96
Totals		88.00	100.02		

Table Hollis1988

**Hollis Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1211	2Z	8	32.00	79	10.13
1317	2Z	8	32.00	28	28.57
1318	2Z	3	12.00	346	0.87
1421	2Z	3	12.00	329	0.91
1422	2Z	3	12.00	286	1.05
Totals		25.00	100.00		

Table Hollis1989

**Hollis Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1316	2Z	3	50.00	65	4.62
1317	2Z	2	33.33	74	2.70
1530	2Z	1	16.67	196	0.51
Totals		6	100.00		

Table Hollis1990

**Hollis Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
902	2Z	2	5.71	28	7.14
1315	2Z	10	28.57	144	6.94
1316	2Z	2	5.71	31	6.45
1317	2Z	10	28.57	79	12.66
1318	2Z	3	8.57	429	0.70
1529	2Z	5	14.29	310	1.61
1530	2Z	3	8.57	215	1.40
Totals		35	99.99		

Table Hollis1991

**Hollis Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1214	2Z	1	5.88	83	1.20
1316	2Z	4	23.53	47	8.51
1317	2Z	8	47.06	59	13.56
1421	2Z	3	17.65	172	1.74
1530	2Z	1	5.88	87	1.15
		17.00	100.00		



Table Hydaburg1987 Hydaburg Deer Harvest for 1987, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	10	8.93	52	19.23
1106	2Z	5	4.46	45	11.11
1107	2Z	5	4.46	43	11.63
1316	2Z	10	8.93	140	7.14
1317	2Z	10	8.93	122	8.20
1318	2Z	31	27.68	494	6.28
1319	2Z	41	36.61	285	14.39
Totals		112	100.00		

Table Hydaburg1988 Hydaburg Deer Harvest for 1988, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	5	8.93	40	12.50
1107	2Z	9	16.07	49	18.37
1319	2Z	5	8.93	242	2.07
1320	2Z	9	16.07	20	45.00
1420	2Z	18	32.14	185	9.73
1421	2Z	5	8.93	329	1.52
1422	2Z	5	8.93	286	1.75
Totals		56	100.00		

Table Hydaburg1989

**Hydaburg Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	4	13.33	18	22.22
1107	2Z	4	13.33	49	8.16
1317	2Z	2	6.67	74	2.70
1318	2Z	4	13.33	399	1.00
1323	2Z	4	13.33	93	4.30
1332	2Z	4	13.33	23	17.39
1421	2Z	4	13.33	224	1.79
1422	2Z	4	13.33	375	1.07
Totals		30	99.98		

Table Hydaburg1990

**Hydaburg Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1107	2Z	10	21.28	12	83.33
1319	2Z	3	6.38	426	0.70
1323	2Z	3	6.38	101	2.97
1332	2Z	17	36.17	62	27.42
1422	2Z	3	6.38	307	0.98
1529	2Z	3	6.38	310	0.97
1529	2Z	3	6.38	310	0.97
1421	2Z	2	4.26	224	0.89
1422	2Z	3	6.38	307	0.98
Totals		47.00	99.99		

Table Hydaburg1991

**Hydaburg Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	14	50.00	50	28.00
1332	2Z	14	50.00	40	35.00
		28.00	100.00		



Table Juneau1987

**Juneau Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1212	2Z	5	0.10	31	16.13
1315	2Z	5	0.10	235	2.13
1318	2Z	10	0.20	494	2.02
1421	2Z	15	0.30	539	2.78
1527	2Z	5	0.10	416	1.20
2305	1C	5	0.10	9	55.56
2517	1C	20	0.40	20	100.00
2620	1C	39	0.78	39	100.00
2621	1C	73	1.46	73	100.00
2722	1C	376	7.52	380	98.95
3001	4Z	49	0.98	1248	3.93
3003	4Z	15	0.30	531	2.82
3104	4Z	15	0.30	585	2.56
3105	4Z	10	0.20	383	2.61
3308	4Z	54	1.08	361	14.96
3309	4Z	15	0.30	190	7.89
3310	4Z	34	0.68	402	8.46
3417	4Z	122	2.44	379	32.19
3418	4Z	49	0.98	123	39.84
3419	4Z	39	0.78	202	19.31
3420	4Z	112	2.24	173	64.74
3521	4Z	29	0.58	121	23.97
3522	4Z	63	1.26	284	22.18
3523	4Z	420	8.40	1066	39.40
3524	4Z	102	2.04	261	39.08
3625	4Z	254	5.08	535	47.48
3626	4Z	166	3.32	252	65.87
3627	4Z	44	0.88	46	95.65
3628	4Z	20	0.40	42	47.62
3629	4Z	224	4.48	416	53.85
3630	4Z	44	0.88	100	44.00
3731	4Z	15	0.30	131	11.45
3732	4Z	15	0.30	20	75.00
3835	4Z	400	8.00	435	91.95

Table Juneau1987 (Continued)

**Juneau Deer Harvest for 1987, by WAA**

3836	4Z	468	9.36	478	97.91
3837	4Z	39	0.78	39	100.00
3938	4Z	83	1.66	264	31.44
3939	4Z	39	0.78	405	9.63
3940	4Z	20	0.40	225	8.89
4041	4Z	98	1.96	282	34.75
4042	4Z	34	0.68	295	11.53
4043	4Z	117	2.34	161	72.67
4044	4Z	107	2.14	107	100.00
4145	4Z	117	2.34	146	80.14
4146	4Z	146	2.92	240	60.83
4147	4Z	566	11.32	595	95.13
4148	4Z	302	6.04	311	97.11
		4,999.00	99.98		

Table Juneau1988

**Juneau Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1530	2Z	6	0.15	201	2.99
2202	1C	13	0.33	18	72.22
2305	1C	6	0.15	6	100.00
2620	1C	25	0.63	25	100.00
2621	1C	31	0.78	36	86.11
2722	1C	313	7.83	318	98.43
2824	1C	13	0.33	13	100.00
3001	4Z	25	0.63	1028	2.43
3002	4Z	13	0.33	592	2.20
3104	4Z	13	0.33	561	2.32
3308	4Z	50	1.25	186	26.88
3309	4Z	25	0.63	161	15.53
3310	4Z	19	0.48	272	6.99
3315	4Z	6	0.15	184	3.26
3416	4Z	19	0.48	149	12.75
3417	4Z	119	2.98	267	44.57
3419	4Z	31	0.78	100	31.00
3420	4Z	50	1.25	103	48.54
3421	4Z	75	1.88	98	76.53
3521	4Z	44	1.10	106	41.51
3522	4Z	56	1.40	155	36.13
3523	4Z	44	1.10	185	23.78
3524	4Z	125	3.13	443	28.22
3525	4Z	182	4.55	365	49.86
3531	4Z	50	1.25	145	34.48
3532	4Z	38	0.95	316	12.03
3626	4Z	157	3.93	220	71.36
3627	4Z	75	1.88	111	67.57
3628	4Z	44	1.10	71	61.97
3629	4Z	150	3.75	232	64.66
3630	4Z	6	0.15	31	19.35
3731	4Z	25	0.63	440	5.68
3734	4Z	6	0.15	87	6.90
3835	4Z	257	6.43	274	93.80



Table Juneau1988 (Continued)

**Juneau Deer Harvest for 1988, by WAA**

3836	4Z	370	9.25	374	98.93
3837	4Z	63	1.58	63	100.00
3938	4Z	119	2.98	298	39.93
3939	4Z	31	0.78	421	7.36
3940	4Z	38	0.95	204	18.63
4042	4Z	31	0.78	134	23.13
4043	4Z	82	2.05	92	89.13
4044	4Z	88	2.20	111	79.28
4045	4Z	63	1.58	82	76.83
4046	4Z	31	0.78	116	26.72
4145	4Z	100	2.50	100	100.00
4146	4Z	119	2.98	134	88.81
4147	4Z	125	3.13	125	100.00
4148	4Z	100	2.50	112	89.29
4149	4Z	132	3.30	141	93.62
4150	4Z	389	9.73	391	99.49
5135	4Z	6	0.15	6	100.00
		<u>3,998.00</u>	<u>100.09</u>		

Table Juneau1989

**Juneau Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1332	2Z	5	0.13	23	21.74
1420	2Z	5	0.13	115	4.35
1422	2Z	5	0.13	375	1.33
2305	1C	5	0.13	5	100.00
2517	1C	10	0.27	10	100.00
2620	1C	20	0.53	20	100.00
2621	1C	100	2.66	104	96.15
2722	1C	296	7.87	321	92.21
2825	1C	5	0.13	5	100.00
3002	4Z	15	0.40	638	2.35
3003	4Z	10	0.27	458	2.18
3105	4Z	25	0.66	78	32.05
3308	4Z	50	1.33	187	26.74
3309	4Z	5	0.13	195	2.56
3310	4Z	5	0.13	365	1.37
3311	4Z	5	0.13	306	1.63
3312	4Z	5	0.13	154	3.25
3313	4Z	25	0.66	187	13.37
3315	4Z	5	0.13	216	2.31
3417	4Z	55	1.46	248	22.18
3418	4Z	40	1.06	91	43.96
3419	4Z	5	0.13	102	4.90
3420	4Z	60	1.60	99	60.61
3421	4Z	20	0.53	109	18.35
3523	4Z	10	0.27	156	6.41
3524	4Z	65	1.73	289	22.49
3525	4Z	160	4.25	289	55.36
3526	4Z	196	5.21	286	68.53
3551	4Z	75	1.99	307	24.43
3627	4Z	65	1.73	95	68.42
3628	4Z	10	0.27	10	100.00
3629	4Z	110	2.92	174	63.22
3630	4Z	15	0.40	40	37.50
3731	4Z	5	0.13	107	4.67

Table Juneau1989 (Continued)

**Juneau Deer Harvest for 1989, by WAA**

3732	4Z	20	0.53	68	29.41
3734	4Z	35	0.93	152	23.03
3835	4Z	211	5.61	222	95.05
3836	4Z	286	7.60	299	95.65
3837	4Z	85	2.26	89	95.51
3938	4Z	110	2.92	225	48.89
3939	4Z	45	1.20	342	13.16
3940	4Z	10	0.27	157	6.37
4041	4Z	15	0.40	43	34.88
4042	4Z	10	0.27	79	12.66
4043	4Z	25	0.66	42	59.52
4044	4Z	110	2.92	199	55.28
4054	4Z	5	0.13	12	41.67
4055	4Z	15	0.40	75	20.00
4145	4Z	160	4.25	188	85.11
4146	4Z	75	1.99	75	100.00
4147	4Z	170	4.52	170	100.00
4148	4Z	241	6.41	264	91.29
4149	4Z	165	4.39	206	80.10
4150	4Z	281	7.47	291	96.56
4222	4Z	65	1.73	257	25.29
4252	4Z	60	1.60	373	16.09
4253	4Z	35	0.93	200	17.50
4256	4Z	25	0.66	105	23.81
4302	1D	10	0.27	10	100.00
		3,761.00	99.95		



Table Juneau1990

**Juneau Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
202	1A	6	0.14	18	33.33
1106	2Z	6	0.14	127	4.72
1317	2Z	11	0.26	79	13.92
1420	2Z	6	0.14	144	4.17
2517	1C	28	0.66	40	70.00
2620	1C	11	0.26	11	100.00
2621	1C	51	1.21	51	100.00
2722	1C	324	7.69	326	99.39
2824	1C	6	0.14	6	100.00
3001	4Z	11	0.26	783	1.40
3002	4Z	11	0.26	585	1.88
3003	4Z	17	0.40	319	5.33
3104	4Z	34	0.81	236	14.41
3308	4Z	62	1.47	160	38.75
3309	4Z	74	1.76	371	19.95
3310	4Z	40	0.95	370	10.81
3312	4Z	6	0.14	205	2.93
3314	4Z	23	0.55	230	10.00
3315	4Z	40	0.95	274	14.60
3417	4Z	142	3.37	240	59.17
3419	4Z	17	0.40	126	13.49
3420	4Z	62	1.47	81	76.54
3523	4Z	23	0.55	242	9.50
3524	4Z	34	0.81	220	15.45
3525	4Z	125	2.97	316	39.56
3526	4Z	290	6.88	355	81.69
3551	4Z	97	2.30	263	36.88
3627	4Z	40	0.95	76	52.63
3628	4Z	23	0.55	33	69.70
3629	4Z	68	1.61	127	53.54
3630	4Z	6	0.14	39	15.38
3734	4Z	6	0.14	188	3.19
3835	4Z	330	7.83	339	97.35
3836	4Z	267	6.34	297	89.90

Table Juneau1990 (Continued)

**Juneau Deer Harvest for 1990, by WAA**

3837	4Z	97	2.30	102	95.10
3938	4Z	205	4.87	445	46.07
3939	4Z	68	1.61	420	16.19
4041	4Z	11	0.26	64	17.19
4042	4Z	6	0.14	80	7.50
4043	4Z	34	0.81	43	79.07
4044	4Z	176	4.18	294	59.86
4055	4Z	57	1.35	183	31.15
4145	4Z	222	5.27	249	89.16
4146	4Z	102	2.42	120	85.00
4147	4Z	148	3.51	195	75.90
4148	4Z	114	2.71	166	68.67
4149	4Z	187	4.44	200	93.50
4150	4Z	227	5.39	281	80.78
4222	4Z	159	3.77	490	32.45
4252	4Z	57	1.35	267	21.35
4253	4Z	17	0.40	166	10.24
4256	4Z	23	0.55	97	23.71
5138	4Z	6	0.14	6	100.00
		4,213.00	99.97		

Table Juneau1991

**Juneau Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1421	2Z	30	1.04	172	17.44
2306	1C	6	0.21	12	50.00
2517	1C	6	0.21	6	100.00
2620	1C	42	1.46	42	100.00
2621	1C	67	2.33	67	100.00
2722	1C	243	8.46	264	92.05
3001	4Z	6	0.21	276	2.17
3308	4Z	97	3.38	165	58.79
3309	4Z	6	0.21	41	14.63
3310	4Z	12	0.42	46	26.09
3315	4Z	18	0.63	47	38.30
3417	4Z	61	2.12	124	49.19
3420	4Z	55	1.92	57	96.49
3421	4Z	42	1.46	58	72.41
3523	4Z	55	1.92	78	70.51
3524	4Z	24	0.84	64	37.50
3525	4Z	55	1.92	82	67.07
3526	4Z	79	2.75	92	85.87
3551	4Z	91	3.17	172	52.91
3627	4Z	49	1.71	74	66.22
3629	4Z	55	1.92	75	73.33
3630	4Z	12	0.42	19	63.16
3734	4Z	42	1.46	111	37.84
3835	4Z	388	13.51	409	94.87
3836	4Z	134	4.67	160	83.75
3837	4Z	18	0.63	22	81.82
3938	4Z	55	1.92	139	39.57
3940	4Z	18	0.63	171	10.53
4043	4Z	30	1.04	38	78.95
4044	4Z	121	4.21	262	46.18
4055	4Z	61	2.12	73	83.56
4145	4Z	158	5.50	169	93.49
4146	4Z	79	2.75	79	100.00
4147	4Z	146	5.09	162	90.12
4148	4Z	152	5.29	165	92.12



Table Juneau1991 (Continued)					
Juneau Deer Harvest for 1991, by WAA					
4149	4Z	140	4.88	142	98.59
4150	4Z	170	5.92	172	98.84
4222	4Z	18	0.63	69	26.09
4252	4Z	6	0.21	182	3.30
4253	4Z	18	0.63	91	19.78
4256	4Z	6	0.21	22	27.27
		2,871.00	100.01		

Table Ketchikan1987

**Ketchikan Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	71	3.54	71	100.00
404	1A	29	1.45	35	82.86
405	1A	6	0.30	12	50.00
406	1A	53	2.64	71	74.65
407	1A	76	3.79	76	100.00
509	1A	65	3.24	66	98.48
510	1A	6	0.30	7	85.71
612	1A	71	3.54	71	100.00
613	1A	135	6.73	146	92.47
614	1A	6	0.30	8	75.00
715	1A	12	0.60	13	92.31
821	1A	12	0.60	12	100.00
823	1A	6	0.30	6	100.00
1003	2Z	41	2.04	93	44.09
1106	2Z	12	0.60	45	26.67
1107	2Z	18	0.90	43	41.86
1108	2Z	6	0.30	6	100.00
1210	2Z	35	1.75	35	100.00
1211	2Z	35	1.75	58	60.34
1212	2Z	18	0.90	31	58.06
1214	2Z	47	2.34	90	52.22
1315	2Z	82	4.09	235	34.89
1316	2Z	18	0.90	140	12.86
1317	2Z	35	1.75	122	28.69
1318	2Z	47	2.34	494	9.51
1319	2Z	35	1.75	285	12.28
1420	2Z	53	2.64	220	24.09
1421	2Z	247	12.32	539	45.83
1422	2Z	200	9.98	495	40.40
1525	2Z	6	0.30	46	13.04
1526	2Z	12	0.60	67	17.91
1527	2Z	176	8.78	416	42.31
1528	2Z	29	1.45	72	40.28
1529	2Z	65	3.24	295	22.03

Table Ketchikan1987 (Continued)

**Ketchikan Deer Harvest for 1987, by WAA**

1817	1B	29	1.45	31	93.55
3001	4Z	41	2.04	1248	3.29
3308	4Z	6	0.30	361	1.66
3313	4Z	24	1.20	217	11.06
3315	4Z	63	3.14	218	28.90
3523	4Z	12	0.60	1066	1.13
3625	4Z	6	0.30	535	1.12
3835	4Z	29	1.45	435	6.67
4043	4Z	18	0.90	161	11.18
4147	4Z	6	0.30	595	1.01
9999	NA	6	0.30	216	2.78
		2,005.00	100.03		



Table Ketchikan1988

**Ketchikan Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	130	7.93	135	96.30
404	1A	13	0.79	13	100.00
405	1A	26	1.59	26	100.00
406	1A	104	6.34	104	100.00
407	1A	104	6.34	104	100.00
408	1A	72	4.39	72	100.00
509	1A	59	3.60	59	100.00
612	1A	46	2.80	62	74.19
613	1A	59	3.60	62	95.16
1003	2Z	65	3.96	126	51.59
1106	2Z	20	1.22	38	52.63
1107	2Z	13	0.79	49	26.53
1210	2Z	13	0.79	13	100.00
1211	2Z	59	3.60	79	74.68
1212	2Z	20	1.22	20	100.00
1214	2Z	46	2.80	93	49.46
1315	2Z	33	2.01	130	25.38
1316	2Z	46	2.80	77	59.74
1318	2Z	39	2.38	346	11.27
1319	2Z	39	2.38	242	16.12
1321	2Z	7	0.43	76	9.21
1420	2Z	104	6.34	185	56.22
1421	2Z	169	10.30	329	51.37
1422	2Z	98	5.98	286	34.27
1526	2Z	20	1.22	115	17.39
1530	2Z	91	5.55	201	45.27
1817	1B	20	1.22	25	80.00
3001	4Z	20	1.22	1028	1.95
3104	4Z	7	0.43	561	1.25
3311	4Z	13	0.79	330	3.94
3315	4Z	39	2.38	184	21.20
3418	4Z	13	0.79	78	16.67
3524	4Z	7	0.43	443	1.58
3731	4Z	13	0.79	440	2.95
3938	4Z	13	0.79	298	4.36
		1,640.00	99.99		

Table Ketchikan1989

**Ketchikan Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	101	6.54	101	100.00
202	1A	10	0.65	32	31.25
405	1A	15	0.97	15	100.00
406	1A	20	1.30	39	51.28
407	1A	46	2.98	46	100.00
408	1A	46	2.98	58	79.31
509	1A	56	3.63	56	100.00
510	1A	25	1.62	56	44.64
612	1A	76	4.92	76	100.00
613	1A	91	5.89	91	100.00
614	1A	10	0.65	17	58.82
901	2Z	5	0.32	18	27.78
1003	2Z	35	2.27	128	27.34
1105	2Z	5	0.32	5	100.00
1107	2Z	25	1.62	49	51.02
1210	2Z	20	1.30	20	100.00
1211	2Z	116	7.51	132	87.88
1212	2Z	46	2.98	46	100.00
1213	2Z	10	0.65	10	100.00
1214	2Z	51	3.30	81	62.96
1315	2Z	25	1.62	92	27.17
1316	2Z	30	1.94	65	46.15
1317	2Z	10	0.65	74	13.51
1318	2Z	51	3.30	399	12.78
1319	2Z	35	2.27	195	17.95
1323	2Z	25	1.62	93	26.88
1420	2Z	71	4.60	115	61.74
1421	2Z	101	6.54	224	45.09
1422	2Z	116	7.51	375	30.93
1525	2Z	5	0.32	24	20.83
1526	2Z	25	1.62	110	22.73
1529	2Z	20	1.30	157	12.74
1530	2Z	51	3.30	196	26.02
1707	1B	5	0.32	5	100.00

Table Ketchikan1989 (Continued)  
**Ketchikan Deer Harvest for 1989, by WAA**

1817	1B	10	0.65	13	76.92
1901	3Z	15	0.97	15	100.00
2722	1C	20	1.30	321	6.23
3002	4Z	20	1.30	638	3.13
3308	4Z	20	1.30	187	10.70
3313	4Z	10	0.65	187	5.35
3314	4Z	10	0.65	135	7.41
3629	4Z	10	0.65	174	5.75
3731	4Z	15	0.97	107	14.02
3835	4Z	5	0.32	222	2.25
3836	4Z	5	0.32	299	1.67
4043	4Z	10	0.65	42	23.81
4145	4Z	10	0.65	188	5.32
4222	4Z	5	0.32	257	1.95
		1,544.00	100.01		



Table Ketchikan1990

**Ketchikan Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	99	5.70	101	98.02
404	1A	14	0.81	14	100.00
405	1A	21	1.21	21	100.00
406	1A	71	4.09	71	100.00
407	1A	85	4.89	85	100.00
408	1A	49	2.82	68	72.06
509	1A	49	2.82	49	100.00
510	1A	49	2.82	53	92.45
612	1A	35	2.01	35	100.00
613	1A	183	10.53	183	100.00
614	1A	14	0.81	17	82.35
901	2Z	7	0.40	19	36.84
902	2Z	7	0.40	28	25.00
1003	2Z	28	1.61	82	34.15
1106	2Z	85	4.89	127	66.93
1108	2Z	21	1.21	21	100.00
1211	2Z	35	2.01	44	79.55
1212	2Z	7	0.40	7	100.00
1213	2Z	28	1.61	31	90.32
1214	2Z	71	4.09	124	57.26
1315	2Z	21	1.21	144	14.58
1317	2Z	21	1.21	79	26.58
1318	2Z	7	0.40	429	1.63
1319	2Z	28	1.61	426	6.57
1323	2Z	21	1.21	101	20.79
1332	2Z	7	0.40	62	11.29
1420	2Z	42	2.42	144	29.17
1421	2Z	49	2.82	118	41.53
1422	2Z	120	6.90	307	39.09
1527	2Z	7	0.40	27	25.93
1528	2Z	7	0.40	33	21.21
1529	2Z	127	7.31	310	40.97
1530	2Z	71	4.09	215	33.02
1531	2Z	7	0.40	52	13.46

Table Ketchikan1990 (Continued)

**Ketchikan Deer Harvest for 1990, by WAA**

1817	1B	14	0.81	14	100.00
1901	3Z	7	0.40	23	30.43
1910	3Z	14	0.81	30	46.67
3002	4Z	7	0.40	585	1.20
3308	4Z	21	1.21	160	13.13
3315	4Z	49	2.82	274	17.88
3525	4Z	21	1.21	316	6.65
3627	4Z	14	0.81	76	18.42
3630	4Z	7	0.40	39	17.95
3731	4Z	14	0.81	154	9.09
3938	4Z	7	0.40	445	1.57
3940	4Z	42	2.42	557	7.54
4043	4Z	7	0.40	43	16.28
4150	4Z	21	1.21	281	7.47
		1,738.00	100.02		

Table Ketchikan1991

**Ketchikan Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	46	3.87	46	100.00
404	1A	8	0.67	8	100.00
405	1A	31	2.61	31	100.00
406	1A	38	3.20	38	100.00
407	1A	38	3.20	40	95.00
408	1A	31	2.61	31	100.00
509	1A	31	2.61	31	100.00
510	1A	23	1.93	46	50.00
612	1A	31	2.61	34	91.18
613	1A	15	1.26	15	100.00
614	1A	8	0.67	10	80.00
901	2Z	31	2.61	50	62.00
1003	2Z	61	5.13	131	46.56
1106	2Z	23	1.93	59	38.98
1107	2Z	8	0.67	8	100.00
1209	2Z	8	0.67	8	100.00
1211	2Z	31	2.61	35	88.57
1212	2Z	15	1.26	41	36.59
1214	2Z	38	3.20	83	45.78
1315	2Z	23	1.93	144	15.97
1316	2Z	38	3.20	47	80.85
1317	2Z	31	2.61	59	52.54
1318	2Z	8	0.67	258	3.10
1319	2Z	115	9.67	345	33.33
1323	2Z	69	5.80	238	28.99
1421	2Z	61	5.13	172	35.47
1422	2Z	76	6.39	237	32.07
1527	2Z	31	2.61	57	54.39
1529	2Z	61	5.13	157	38.85
1530	2Z	61	5.13	87	70.11
1531	2Z	8	0.67	26	30.77
1817	1B	8	0.67	8	100.00
1910	3Z	31	2.61	49	63.27
3309	4Z	15	1.26	41	36.59
3311	4Z	15	1.26	56	26.79
3938	4Z	15	1.26	139	10.79
4043	4Z	8	0.67	38	21.05
		1,189.00	99.99		



Table Klawock1987

**Klawock Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	33	10.54	52	63.46
1003	2Z	16	5.11	93	17.20
1317	2Z	8	2.56	122	6.56
1318	2Z	74	23.64	494	14.98
1319	2Z	33	10.54	285	11.58
1420	2Z	25	7.99	220	11.36
1421	2Z	58	18.53	539	10.76
1422	2Z	58	18.53	495	11.72
1529	2Z	8	2.56	285	2.71
Totals		313.00	100.00		

Table Klawock1988

**Klawock Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
902	2Z	11	4.40	11	100.00
1317	2Z	11	4.40	28	39.29
1318	2Z	126	50.40	346	36.42
1320	2Z	11	4.40	28	55.00
1321	2Z	46	18.40	76	60.53
1421	2Z	11	4.40	329	3.34
1422	2Z	23	9.20	286	8.04
1527	2Z	11	4.40	43	25.58
Totals		250.00	100.00		

Table Klawock1989

**Klawock Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
902	2Z	7	2.93	20	35.00
1107	2Z	7	2.93	49	14.29
1319	2Z	113	47.28	399	28.32
1319	2Z	7	2.93	195	3.59
1323	2Z	7	2.93	93	7.53
1332	2Z	7	2.93	23	30.43
1421	2Z	13	5.86	224	6.25
1422	2Z	28	11.72	375	7.47
1528	2Z	21	8.79	51	41.18
1529	2Z	28	11.72	157	17.83
Totals		239.00	100.02		

Table Klawock1990

**Klawock Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1317	2Z	18	6.10	79	22.78
1318	2Z	151	51.19	429	35.20
1319	2Z	36	12.20	426	8.45
1323	2Z	9	3.05	101	8.91
1422	2Z	36	12.20	307	11.73
1527	2Z	9	3.05	27	33.33
1529	2Z	36	12.20	310	11.61
Totals		295.00	99.99		



Table Klawock1991

**Klowock Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	9	2.46	131	6.87
1315	2Z	19	5.19	144	13.19
1318	2Z	85	23.22	258	32.95
1319	2Z	57	15.57	345	16.52
1323	2Z	75	20.49	238	31.51
1421	2Z	19	5.19	172	11.05
1422	2Z	47	12.84	238	19.83
1526	2Z	9	2.46	51	17.65
1527	2Z	19	5.19	57	33.33
3526	4Z	9	2.46	92	9.78
3627	4Z	9	2.46	74	12.16
3629	4Z	9	2.46	75	12.00
		366.00	99.99		



Table Labouchere Bay1987 Labouchere Bay Deer Harvest for 1987, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1422	2Z	8	11.43	495	1.62
1527	2Z	1	11.43	416	1.92
1528	2Z	1	11.43	72	11.11
1529	2Z	46	65.71	295	15.59
Totals	70.00	100.00			

Table Labouchere Bay1988 Labouchere Bay Deer Harvest for 1988, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1529	2Z	24	100	146	16.44

Table Labouchere Bay1989 Labouchere Bay Deer Harvest for 1989, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1527	2Z	1	2.04	12	8.33
1529	2Z	47	95.92	157	29.94
1531	2Z	1	2.04	46	2.17
	49.00	100.00			

Table Labouchere Bay1990

**Labouchere Bay Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1422	2Z	6	7.89	307	1.95
1524	2Z	6	7.89	6	100.00
1524	2Z	64	84.21	310	20.65
	76.00	99.99			

Table Labouchere Bay1991

**Labouchere Bay Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1529	2Z	17	100.00	157	10.83



Table Metlakatla Bay1987

**Metlakatla Bay Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
202	1A	14	73.68	19	73.68
1211	2Z	5	26.32	58	8.62
		19.00	100.00		

Table Metlakatla Bay1988

**Metlakatla Bay Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	5	11.63	135	3.70
202	1A	19	37.21	19	100.00
303	1A	19	44.19	25	76.00
1530	2Z	3	6.98	201	1.49
		43.00	100.01		

Table Metlakatla Bay1989

**Metlakatla Bay Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
202	1A	22	57.89	32	68.75
1211	2Z	2	5.26	132	1.52
1316	2Z	7	18.42	65	10.77
1319	2Z	2	5.26	195	1.03
1527	2Z	5	13.16	12	41.67
		38.00	99.99		



Table Metlakatla Bay1990 Metlakatla Bay Deer Harvest for 1990, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
101	1A	2	6.25	101	1.98
202	1A	12	37.50	18	66.67
303	1A	2	6.25	2	100.00
1210	2Z	9	28.13	27	33.33
1318	2Z	2	6.25	429	0.47
1422	2Z	5	15.63	307	1.63
		32.00	100.01		

Table Metlakatla1991 Metlakatla Deer Harvest for 1991, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
303	1A	20	57.14	20	100.00
1210	2Z	6	17.14	9	66.67
1214	2Z	3	8.57	83	3.61
1529	2Z	6	17.14	157	3.82
		35.00	99.99		

Table Naukati1988 Naukati Deer Harvest for 1988, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1422	2Z	6	46.15	286	2.10
1531	2Z	7	53.85	40	17.50
		13.00	100.00		

Table Naukati1989 Naukati Deer Harvest for 1989, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1422	2Z	11	52.38	375	2.93
1531	2Z	10	47.62	46	21.74
		21.00	100.00		

Table Naukati1990

**Naukati Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	5	10.42	82	6.10
1422	2Z	38	79.17	307	12.38
1531	2Z	5	10.42	52	9.62
		48.00	100.01		

Table Naukati1991

**Naukati Chuck Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1323	2Z	10	30.30	238	4.20
1422	2Z	17	51.52	237	7.17
1530	2Z	6	18.18	87	6.90
		33.00	100.00		



Table "Other Alaska"1987

**"Other Alaska" Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1318	2Z	8	3.67	494	1.62
1319	2Z	8	3.67	285	2.81
1421	2Z	3	1.38	539	0.56
3001	4Z	16	7.34	1248	1.28
3002	4Z	8	3.67	437	1.83
3003	4Z	16	7.34	531	4.91
3104	4Z	3	1.38	585	0.51
3105	4Z	29	13.30	383	7.57
3206	4Z	5	2.29	286	1.75
3309	4Z	3	1.38	190	1.58
3310	4Z	29	13.30	402	7.21
3311	4Z	18	8.26	518	3.47
3315	4Z	5	2.29	218	2.29
3416	4Z	8	3.67	163	4.91
3417	4Z	8	2.29	379	1.32
3521	4Z	3	1.38	121	2.48
3625	4Z	5	2.29	535	0.93
3731	4Z	8	3.67	131	6.11
3733	4Z	3	1.38	140	2.14
4041	4Z	16	7.34	282	5.67
4042	4Z	8	3.67	295	2.71
4146	4Z	11	5.05	240	4.58
		218.00	100.01		

Table "Other Alaska"1988

**"Other Alaska" Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
303	1A	6	2.34	25	24.00
612	1A	16	6.25	62	25.81
1315	2Z	5	1.95	130	3.85
1319	2Z	16	3.91	242	4.13
1422	2Z	7	2.73	286	2.45
2517	1C	17	6.64	17	100.00
2722	1C	5	1.95	318	1.57
3002	4Z	5	1.95	592	0.84
3003	4Z	13	5.08	489	2.66
3206	4Z	28	10.94	145	19.31
3313	4Z	7	2.73	125	5.60
3524	4Z	5	1.95	443	1.13
3525	4Z	63	24.61	365	17.26
3531	4Z	6	2.34	145	4.13
3627	4Z	5	1.95	111	4.50
3629	4Z	6	2.34	232	2.59
3731	4Z	7	2.73	440	1.59
3733	4Z	10	3.91	113	3.85
3835	4Z	13	5.08	13	100.00
3836	4Z	16	6.25	16	100.00
3939	4Z	6	2.34	6	100.00
		256.00	99.97		



Table "Other Alaska"1989

**"Other Alaska" Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
408	1A	5	3.13	58	8.62
1530	2Z	5	3.13	196	2.55
2722	1C	5	3.13	321	1.56
3001	4Z	25	15.63	553	4.52
3002	4Z	5	3.13	638	0.78
3003	4Z	15	9.38	458	3.28
3104	4Z	5	3.13	133	3.76
3313	4Z	20	12.50	187	10.70
3420	4Z	5	3.13	99	5.05
3835	4Z	5	3.13	5	100.00
3836	4Z	35	21.88	35	100.00
3837	4Z	25	15.63	25	100.00
4150	4Z	5	3.13	291	1.72
		160.00	100.06		



Table "Other Alaska"1990

**"Other Alaska" Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
408	1A	6	1.77	68	8.82
1210	2Z	12	5.31	27	66.67
1318	2Z	6	1.77	429	1.40
1905	3Z	12	3.54	54	22.22
2101	1C	6	1.77	6	100.00
2517	1C	12	3.54	40	30.00
3002	4Z	12	3.54	585	2.05
3314	4Z	6	1.77	230	2.61
3315	4Z	12	3.54	274	4.38
3416	4Z	37	10.91	203	18.23
3417	4Z	6	1.77	240	2.50
3419	4Z	31	9.14	126	24.60
3523	4Z	6	1.77	242	2.48
3524	4Z	6	1.77	220	2.73
3525	4Z	6	1.77	316	1.90
3629	4Z	24	7.08	127	18.90
3734	4Z	18	5.31	188	9.57
4044	4Z	18	5.31	294	6.12
4055	4Z	49	14.45	183	26.78
4147	4Z	24	7.08	195	12.31
4150	4Z	18	5.31	281	6.41
4222	4Z	6	1.77	490	1.22
		339.00	99.99		

Table "Other Alaska"1991

**"Other Alaska" Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1212	2Z	22	17.19	41	53.66
2722	1C	16	12.50	264	6.06
3002	4Z	5	3.91	243	2.06
3105	4Z	32	25.00	154	20.78
3835	4Z	5	3.91	409	1.22
3836	4Z	16	12.50	160	10.00
4044	4Z	32	25.00	262	12.21
		128.00	100.01		



Table "Outside Alaska"1987

**"Outside Alaska" Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	9	12.00	63	9.68
1315	2Z	5	6.67	235	2.13
1527	2Z	27	36.00	416	6.49
3417	4Z	5	6.67	379	1.32
3938	4Z	5	6.67	264	1.89
4042	4Z	5	6.67	295	1.89
4043	4Z	14	18.67	161	8.70
4148	4Z	5	6.67	311	1.61
		75.00	100.02		

Table "Outside Alaska"1988

**"Outside Alaska" Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1318	2Z	24	28.57	346	6.94
1421	2Z	5	5.95	329	1.52
1422	2Z	5	5.95	286	1.75
1528	2Z	10	11.90	63	15.87
1529	2Z	5	5.95	146	3.42
3003	4Z	5	5.95	489	1.02
3104	4Z	10	11.90	561	1.75
3521	4Z	5	5.95	106	4.72
3835	4Z	5	5.95	274	1.52
4044	4Z	5	5.95	111	4.50
4046	4Z	5	5.95	116	4.31
		84.00	99.97		



Table "Outside Alaska"1989

**"Outside Alaska" Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
406	1A	5	8.77	39	12.82
1318	2Z	5	8.77	399	1.25
1526	2Z	5	8.77	110	4.55
3001	4Z	9	15.79	553	1.63
3002	4Z	9	15.79	638	1.41
3311	4Z	5	8.77	306	1.63
3524	4Z	5	8.77	289	1.73
3551	4Z	5	8.77	307	1.63
3734	4Z	9	15.79	152	5.92
		57.00	99.99		

Table "Outside Alaska"1990

**"Outside Alaska" Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	2	2.25	82	2.44
1213	2Z	3	3.37	31	9.62
1214	2Z	3	3.37	124	2.42
1316	2Z	2	2.25	31	6.45
1317	2Z	2	2.25	79	2.53
1318	2Z	6	6.74	429	1.40
1319	2Z	9	10.11	426	2.44
1323	2Z	3	3.37	101	2.97
1421	2Z	5	5.62	118	4.24
1422	2Z	6	6.74	307	1.95
1525	2Z	2	2.25	59	3.39
1531	2Z	5	5.62	52	9.62
2722	1C	2	2.25	326	0.61
3001	4Z	2	2.25	783	0.26
3002	4Z	5	5.62	585	0.85
3207	4Z	2	2.25	99	2.02
3310	4Z	5	5.62	370	1.35
3313	4Z	3	3.37	137	2.19
3523	4Z	2	2.25	242	0.83
3526	4Z	2	2.25	355	0.56
3551	4Z	3	3.37	263	1.14
3627	4Z	2	2.25	76	2.63
3835	4Z	2	2.25	339	0.59
3836	4Z	2	2.25	297	0.67
4043	4Z	2	2.25	43	4.65
4145	4Z	2	2.25	249	0.80
4222	4Z	5	5.62	490	1.02
		89.00	100.04		



Table "Outside Alaska"1991

**"Outside Alaska" Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	2	4.35	131	1.53
1211	2Z	2	4.35	35	5.71
1214	2Z	2	4.35	83	2.91
1317	2Z	4	8.70	59	6.78
1318	2Z	2	4.35	258	0.78
1319	2Z	4	8.70	345	1.16
1421	2Z	5	10.87	172	2.91
1526	2Z	2	4.35	59	3.92
1528	2Z	5	10.87	23	21.74
1529	2Z	2	4.35	157	1.27
3002	4Z	2	4.35	243	0.82
3207	4Z	2	4.35	117	1.71
3313	4Z	2	4.35	83	2.91
3523	4Z	2	4.35	78	2.56
3835	4Z	2	4.35	409	0.49
4044	4Z	4	8.70	262	1.53
4149	4Z	2	4.35	142	1.41
		46.00	100.04		



Table Petersburg1987

**Petersburg Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
202	1A	5	0.35	19	26.32
1315	2Z	10	0.69	235	4.26
1316	2Z	97	6.74	140	69.29
1319	2Z	10	0.69	285	3.51
1420	2Z	5	0.35	220	2.27
1421	2Z	15	4.03	539	2.78
1422	2Z	24	1.67	495	4.85
1526	2Z	5	0.35	67	7.46
1527	2Z	73	5.07	416	17.55
1528	2Z	19	1.32	72	26.39
1529	2Z	58	4.03	295	19.66
1605	1B	24	1.67	24	100.00
1706	1B	10	0.69	10	100.00
1904	3Z	15	1.04	53	28.30
1905	3Z	10	0.69	10	100.00
2007	3Z	5	0.35	5	100.00
3002	4Z	10	0.69	437	2.29
3308	4Z	111	7.71	361	30.75
3313	4Z	10	3.34	217	22.12
3315	4Z	68	4.73	218	31.19
3417	4Z	29	2.02	379	7.65
3522	4Z	5	0.35	284	1.76
3731	4Z	34	2.36	131	25.95
3732	4Z	5	0.35	24	25.00
3733	4Z	44	3.06	140	31.43
3734	4Z	15	1.04	93	16.13
3836	4Z	10	0.69	478	2.09
3938	4Z	117	8.13	264	44.32
3939	4Z	262	18.21	405	64.69

Table Petersburg1987 (Continued)

**Petersburg Deer Harvest for 1987, by WAA**

3940	4Z	155	10.77	225	68.89
4042	4Z	5	0.35	295	1.69
4043	4Z	5	0.35	161	3.11
4145	4Z	29	2.02	146	19.86
4146	4Z	83	5.77	240	34.58
4147	4Z	19	1.32	595	3.19
		1,439.00	100.00		



Table Petersburg1988  
**Petersburg Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	11	0.93	126	8.73
1420	2Z	5	0.42	185	2.70
1421	2Z	5	0.42	329	1.52
1524	2Z	5	0.42	5	100.00
1526	2Z	53	4.49	115	46.09
1527	2Z	16	1.36	43	37.21
1528	2Z	16	1.36	63	25.40
1529	2Z	21	1.78	146	14.38
1530	2Z	5	0.42	201	2.49
1605	1B	42	3.56	42	100.00
1706	1B	11	0.93	11	100.00
1707	1B	5	0.42	11	45.45
1904	3Z	11	0.93	126	9.17
1905	3Z	5	0.42	11	45.45
3001	4Z	21	1.78	1028	2.04
3311	4Z	11	0.93	330	3.33
3313	4Z	16	1.36	125	12.80
3315	4Z	69	5.85	184	37.50
3523	4Z	11	0.93	185	5.95
3531	4Z	21	1.78	145	14.48
3533	4Z	5	0.42	118	4.24
3731	4Z	302	25.59	440	68.64
3732	4Z	5	0.42	5	100.00
3733	4Z	32	2.71	113	28.32
3938	4Z	106	8.98	298	35.57
3939	4Z	344	29.15	421	81.71
3940	4Z	21	1.78	201	10.29
9999	NA	5	0.42	50	10.00
		1,180.00	99.96		



Table Petersburg1989

**Petersburg Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	14	1.27	128	10.94
1318	2Z	5	0.45	399	1.25
1319	2Z	9	0.82	195	4.62
1323	2Z	18	1.63	93	19.35
1420	2Z	5	0.45	115	4.35
1421	2Z	9	0.82	224	4.02
1526	2Z	46	4.17	110	41.82
1528	2Z	23	2.09	51	45.10
1529	2Z	28	2.54	157	17.83
1530	2Z	14	1.27	196	7.14
1531	2Z	5	0.45	46	10.87
1602	1B	5	0.45	5	100.00
1603	1B	5	0.45	5	100.00
1605	1B	37	3.36	37	100.00
1706	1B	9	0.82	9	100.00
1904	3Z	9	0.82	122	7.38
1905	3Z	14	1.27	26	53.85
3308	4Z	28	2.54	187	14.97
3309	4Z	46	4.17	195	23.59
3310	4Z	5	0.45	365	1.37
3313	4Z	5	0.45	187	2.67
3315	4Z	133	12.07	216	61.57
3523	4Z	14	1.27	156	8.97
3525	4Z	28	2.54	289	9.69
3731	4Z	46	4.17	107	42.99
3732	4Z	46	4.17	68	67.65
3734	4Z	28	2.54	152	18.42
3938	4Z	60	5.44	225	26.67
3939	4Z	220	19.96	342	64.33

Table Petersburg1989 (Continued)

**Petersburg Deer Harvest for 1989, by WAA**

3940	4Z	110	9.98	157	70.06
4055	4Z	14	1.27	75	18.67
4145	4Z	18	1.63	188	9.57
4148	4Z	14	1.63	264	6.82
4149	4Z	28	2.54	206	13.59
		1,102.00	99.95		



Table Petersburg1990

**Petersburg Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
315	2Z	5	0.33	144	3.47
1318	2Z	5	0.33	429	1.17
1319	2Z	5	0.33	426	1.17
1323	2Z	20	1.30	101	19.80
1420	2Z	25	1.63	144	17.36
1421	2Z	10	0.65	118	8.47
1422	2Z	10	0.65	307	3.26
1526	2Z	5	0.33	26	19.23
1528	2Z	5	0.33	33	15.15
1529	2Z	20	1.30	310	6.45
1603	1B	10	0.65	10	100.00
1605	1B	79	5.15	79	100.00
1706	1B	35	2.28	35	100.00
1707	1B	5	0.33	5	100.00
1901	3Z	5	0.33	23	21.74
1904	3Z	10	0.65	91	10.99
1905	3Z	10	0.65	54	18.52
2926	1C	5	0.33	22	22.73
3308	4Z	20	1.30	160	12.50
3309	4Z	30	1.96	371	8.09
3310	4Z	10	0.65	370	2.70
3312	4Z	5	0.33	205	2.44
3313	4Z	20	1.30	137	14.60
3315	4Z	104	6.78	274	37.96
3731	4Z	69	4.50	154	44.81
3733	4Z	25	1.63	126	19.84
3938	4Z	203	13.23	445	45.62
3939	4Z	332	21.64	420	79.05
3940	4Z	322	20.99	557	57.81



Table Petersburg1990 (Continued)					
Petersburg Deer Harvest for 1990, by WAA					
4041	4Z	5	0.33	64	7.81
4055	4Z	30	1.96	183	16.39
4145	4Z	25	1.63	249	10.04
4146	4Z	10	0.65	120	8.33
4147	4Z	20	1.30	195	10.26
4148	4Z	35	2.28	166	21.08
		1,534.00	100.01		

Table Petersburg1991

**Petersburg Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1318	2Z	5	0.78	258	1.94
1319	2Z	5	0.78	345	1.45
1323	2Z	16	2.49	238	6.72
1525	2Z	11	1.71	68	16.18
1528	2Z	11	1.71	23	47.83
1601	1B	5	0.78	5	100.00
1605	1B	21	3.27	21	100.00
1706	1B	16	2.49	16	100.00
1904	3Z	5	0.78	42	11.90
2007	3Z	155	24.14	162	95.68
2008	3Z	11	1.71	11	100.00
3308	4Z	27	4.21	165	16.36
3315	4Z	21	3.27	47	44.68
3731	4Z	5	0.78	12	41.67
3733	4Z	21	3.27	95	22.11
3835	4Z	11	1.71	409	2.69
3938	4Z	54	8.41	139	38.85
3939	4Z	129	20.09	137	94.16
3940	4Z	70	10.90	171	40.94
4145	4Z	11	1.71	169	6.51
4253	4Z	32	4.98	91	35.16
		642.00	99.97		



Table Point Baker1987

**Point Baker Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1527	2Z	3	6.25	416	0.72
1529	2Z	33	68.75	295	11.19
3939	4Z	12	25.00	405	2.96
		48.00	100.00		

Table Point Baker 1988

**Point Baker Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1321	2Z	3	10.34	76	3.95
1526	2Z	3	10.34	115	2.61
1527	2Z	5	17.24	43	11.63
1529	2Z	18	62.07	146	12.33
		29.00	99.99		

Table Point Baker1989

**Point Baker Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1526	2Z	6	22.22	110	5.45
1529	2Z	21	77.78	157	13.38
		27.00	100.00		



Table Point Baker1990

**Point Baker Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1525	2Z	2	12.50	59	3.39
1528	2Z	6	50.00	33	24.24
1529	2Z	6	37.50	310	1.94
		16.00	100.00		

Table Point Baker1991

**Point Baker Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1529	2Z	4	100.00	157	2.55

Table Port Protection1987

**Port Protection Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1529	2Z	9	100.00	295	3.05

Table Port Protection1988

**Port Protection Deer Harvest for 1988, by WAA**

No Reported Harvest

Table Port Protection1989

**Port Protection Deer Harvest for 1989, by WAA**

No Reported Harvest

Table Port Protection1990

**Port Protection Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1529	2Z	16	100.00	310	5.16

Table Port Protection1991

**Port Protection Deer Harvest for 1991, by WAA**

No Reported Harvest



Table Saxman1987

**Saxman Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
406	1A	12	66.67	71	16.90
1318	2Z	6	33.33	494	1.21
		18.00	100.00		

Table Saxman1988

**Saxman Deer Harvest for 1988, by WAA**

No Reported Harvest

Table Saxman1989

**Saxman Deer Harvest for 1989, by WAA**

No Reported Harvest

Table Saxman1990

**Saxman Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
408	1A	11	100.00	68	16.18

Table Saxman1991

**Saxman Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
407	1A	2	11.11	40	5.00
1211	2Z	2	11.11	35	5.71
1315	2Z	7	38.89	144	4.86
1319	2Z	7	38.89	345	2.03
		18.00	100.00		



Table Skowl Arm/Polk1987

**Skowl Arm/Polk Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1214	2Z	36	100.00	90	40.00

Table Skowl Arm/Polk1988

**Skowl Arm/Polk Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1214	2Z	29	78.38	93	31.18
1529	2Z	8	21.62	146	5.48
		37.00	100.00		

Table Skowl Arm/Polk1989

**Skowl Arm/Polk Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1214	2Z	15	100.00	81	18.52

Table Skowl Arm/Polk1990

**Skowl Arm/Polk Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1214	2Z	24	100.00	124	19.35

Table Skowl Arm/Polk1991

**Skowl Arm/Polk Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1212	2Z	4	33.33	41	9.76
1214	2Z	6	50.00	83	7.23
1317	2Z	2	16.67	59	3.39
		12.00	100.00		



Table Thorne Bay1987

**Thorne Bay Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1315	2Z	110	30.14	235	46.81
1319	2Z	106	29.04	285	37.19
1420	2Z	23	6.30	220	10.45
1421	2Z	68	18.63	539	12.62
1422	2Z	38	10.41	495	7.68
1527	2Z	16	4.38	416	3.85
9999	NA	4	1.10	216	1.85
		365.00	100.00		

Table Thorne Bay1988

**Thorne Bay Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	11	3.50	126	8.73
1107	2Z	16	5.10	49	32.65
1214	2Z	5	1.59	93	5.38
1315	2Z	82	26.11	130	63.08
1316	2Z	5	1.59	77	6.49
1318	2Z	5	1.59	346	1.45
1319	2Z	98	31.21	242	40.50
1420	2Z	16	5.10	185	8.65
1421	2Z	11	3.50	329	3.34
1422	2Z	60	19.11	286	20.98
1529	2Z	5	1.59	146	3.42
		314.00	99.99		



Table Thorne Bay1989

**Thorne Bay Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
510	1A	20	5.73	56	35.71
1214	2Z	13	3.72	81	16.05
1315	2Z	59	16.91	92	64.13
1318	2Z	33	9.46	399	8.27
1319	2Z	111	31.81	195	56.92
1323	2Z	7	2.01	93	7.53
1420	2Z	7	2.01	195	6.09
1421	2Z	20	5.73	224	8.93
1422	2Z	65	18.62	375	17.33
1528	2Z	7	2.01	51	13.73
3003	4Z	7	2.01	458	1.53
		349.00	100.02		

Table Thorne Bay1990

**Thorne Bay Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	6	1.36	19	31.58
1315	2Z	95	21.59	144	65.97
1316	2Z	12	2.73	31	38.71
1319	2Z	249	56.59	426	58.45
1420	2Z	12	2.73	144	8.33
1421	2Z	12	4.09	118	15.25
1422	2Z	24	5.45	307	7.82
1527	2Z	6	1.36	27	22.22
1530	2Z	6	1.36	215	2.79
5132	12	12	2.73	12	100.00
		440.00	99.99		

Table Thorne Bay1991

**Thorne Bay Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
901	2Z	5	1.72	50	10.00
1214	2Z	11	3.78	83	13.25
1315	2Z	81	27.84	144	56.25
1316	2Z	5	1.72	47	10.64
1318	2Z	5	1.72	258	1.94
1319	2Z	130	44.67	345	37.68
1323	2Z	11	3.78	238	4.62
1420	2Z	16	5.50	38	42.11
1422	2Z	11	3.78	237	1.94
4147	4Z	16	5.50	162	9.88
		291.00	100.01		



Table Whale Pass1987 Whale Pass Deer Harvest for 1987, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1527	2Z	31	83.78	416	7.45
1529	2Z	3	8.11	72	4.17
1529	2Z	3	8.11	295	1.02
		37.00	100.00		

Table Whale Pass1988 Whale Pass Deer Harvest for 1988, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1421	2Z	3	9.09	329	0.91
1422	2Z	2	6.06	286	0.70
1529	2Z	3	9.09	146	2.05
1530	2Z	25	75.76	201	12.44
		33.00	100.00		

Table Whale Pass1989 Whale Pass Deer Harvest for 1989, by WAA					
WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1107	2Z	13	20.31	49	26.53
1318	2Z	10	15.63	399	2.51
1319	2Z	5	7.81	195	2.56
1421	2Z	5	7.81	224	2.23
1530	2Z	31	48.44	196	15.82
		64.00	100.00		



Table Whale Pass1990

**Whale Pass Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1316	2Z	2	4.65	31	6.45
1319	2Z	7	16.28	426	1.64
1422	2Z	3	6.98	307	0.98
1527	2Z	5	11.63	27	18.52
1528	2Z	2	4.65	33	6.06
1529	2Z	5	11.63	310	1.64
1530	2Z	14	32.56	215	6.51
4148	4Z	5	11.63	166	3.01
		43.00	100.01		

Table Whale Pass1991

**Whale Pass Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1319	2Z	6	14.29	345	1.74
1422	2Z	1	2.38	237	0.42
1526	2Z	3	7.14	51	5.88
1527	2Z	3	7.14	87	5.26
1528	2Z	7	16.67	23	30.43
1529	2Z	3	7.14	157	1.91
1530	2Z	19	45.24	87	21.84
		42.00	100.00		

Table Wrangell1987

**Wrangell Deer Harvest for 1987, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1420	2Z	19	5.92	220	8.64
1525	2Z	6	1.87	46	13.04
1526	2Z	13	4.05	67	19.40
1527	2Z	38	11.84	416	9.13
1528	2Z	13	4.05	72	18.06
1528	2Z	6	1.87	295	2.03
1901	3Z	13	5.92	19	100.00
1903	3Z	25	7.79	25	100.00
1904	3Z	38	11.84	53	71.70
1906	3Z	25	7.79	25	100.00
3001	4Z	25	7.79	1248	2.00
3313	4Z	25	7.79	217	11.52
3731	4Z	13	4.05	131	9.92
3733	4Z	25	7.79	140	17.86
3938	4Z	25	7.79	264	9.47
4041	4Z	6	1.87	282	2.13
		321.00	100.02		



Table Wrangell1988

**Wrangell Deer Harvest for 1988, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1003	2Z	6	1.66	126	4.76
1319	2Z	18	3.32	242	4.96
1528	2Z	12	3.32	115	10.43
1528	2Z	24	6.65	63	38.10
1528	2Z	18	4.99	146	12.33
1530	2Z	36	9.97	201	17.91
1707	1B	6	1.66	11	54.55
1810	1B	12	3.32	12	100.00
1903	3Z	42	11.63	42	100.00
1904	3Z	109	30.19	126	90.83
1905	3Z	6	1.66	11	54.55
1906	3Z	24	6.65	37	64.86
1908	3Z	12	3.32	12	100.00
3525	4Z	6	1.66	365	1.64
3733	4Z	12	3.32	113	10.62
3734	4Z	18	4.99	87	20.69
5015	3Z	6	1.66	11	54.55
		361.00	99.97		



Table Wrangell1989

**Wrangell Deer Harvest for 1989, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1316	2Z	5	1.30	65	7.69
1318	2Z	5	1.30	399	1.25
1318	2Z	15	3.89	195	7.69
1323	2Z	5	1.30	93	5.38
1422	2Z	5	1.30	375	1.33
1525	2Z	5	1.30	24	20.83
1526	2Z	5	1.30	110	4.55
1530	2Z	61	15.80	196	31.12
1902	3Z	5	1.30	5	100.00
1903	3Z	15	3.89	15	100.00
1904	3Z	113	29.27	122	92.62
1905	3Z	5	1.30	26	19.23
1906	3Z	31	8.03	37	83.78
1910	3Z	15	3.89	15	100.00
3731	4Z	20	5.18	107	18.69
3733	4Z	46	11.92	122	37.70
3734	4Z	10	2.59	152	6.58
3938	4Z	15	2.59	225	4.44
3939	4Z	5	1.30	342	1.46
4041	4Z	5	1.30	43	11.63
		386.00	100.05		

Table Wrangell1990

**Wrangell Deer Harvest for 1990, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1420	2Z	5	1.53	144	3.47
1528	2Z	11	3.36	33	33.33
1530	2Z	92	28.13	215	42.79
1816	1B	5	1.53	5	100.00
1901	3Z	11	3.36	23	47.83
1903	3Z	16	4.89	16	100.00
1904	3Z	81	24.77	81	89.01
1905	3Z	27	8.26	54	50.00
1906	3Z	16	4.89	16	88.89
1910	3Z	16	4.89	30	53.33
3001	4Z	5	1.53	783	0.64
3308	4Z	5	1.53	160	3.13
3311	4Z	16	4.89	354	4.52
3312	4Z	5	1.53	205	2.44
3314	4Z	5	1.53	230	2.17
3940	4Z	11	3.36	557	1.97
		327.00	99.98		



Table Wrangell1991

**Wrangell Deer Harvest for 1991, by WAA**

WAA	GMU	Community Harvest from WAA	Percent Total Community Harvest from WAA	Total WAA Deer Harvest	Percent Total WAA Harvest from Community
1421	2Z	6	2.29	172	3.49
1525	2Z	6	2.29	68	8.82
1531	2Z	6	2.29	26	23.08
1903	3Z	18	6.87	18	100.00
1904	3Z	37	14.12	42	88.10
1905	3Z	117	44.66	117	100.00
1906	3Z	12	4.58	18	100.00
1910	3Z	18	6.87	49	36.73
3001	4Z	6	2.29	276	2.17
3002	4Z	18	6.87	243	7.41
3314	4Z	6	2.29	47	12.77
3940	4Z	12	4.58	171	7.02
		262.00	100.00		



# **Appendix K**

## **Old Growth Patch Maps**



Figure K-1  
Old-Growth Patch Map for Alternative 3



Source: Ketchikan Area GIS

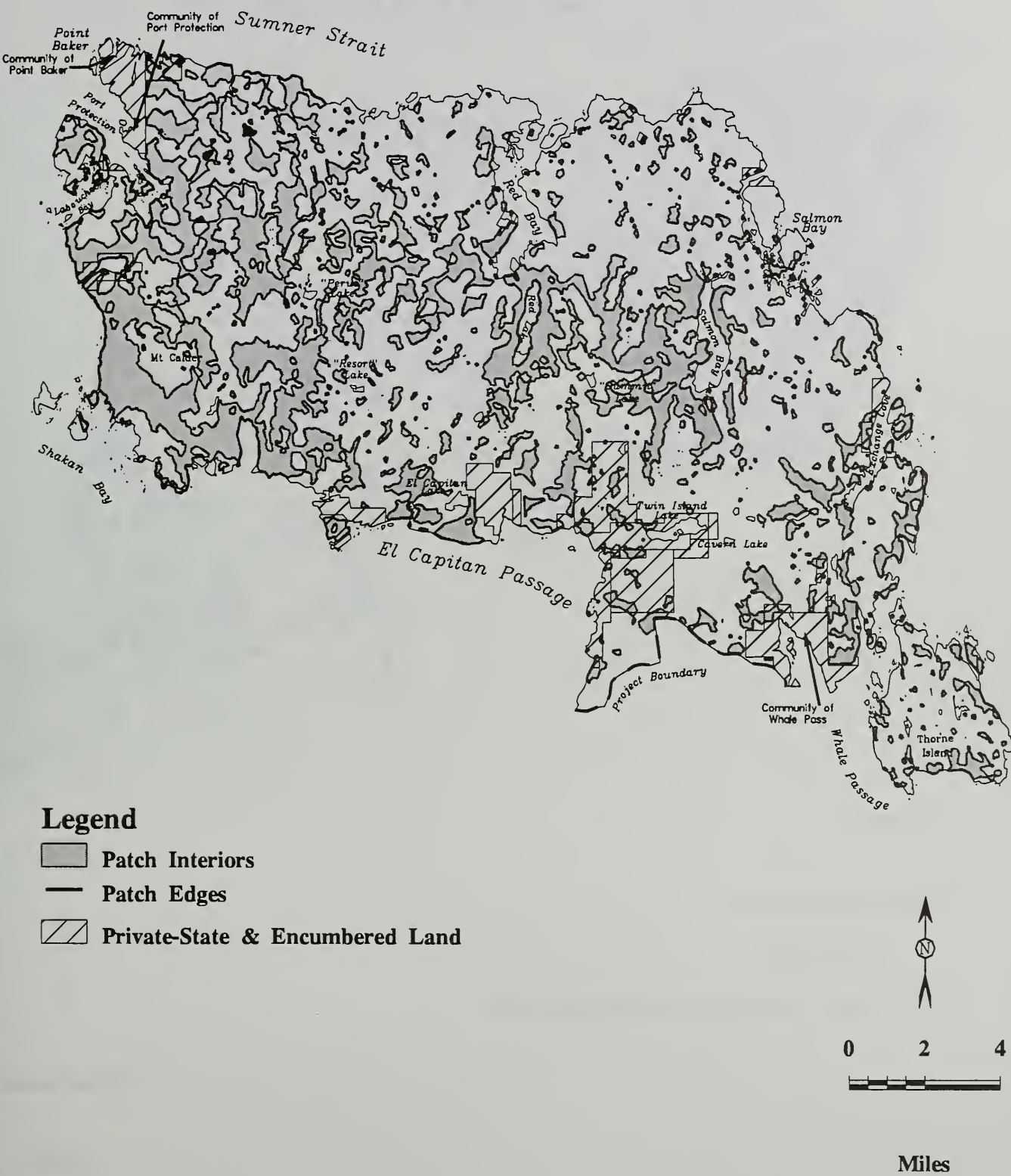


Figure K-2  
Old-Growth Patch Map for Alternative 4



Source: Ketchikan Area GIS

Figure K-3  
Old-Growth Patch Map for Alternative 5



Source: Ketchikan Area GIS

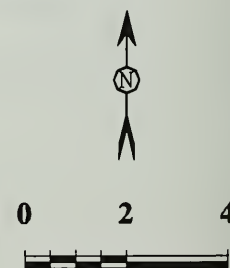


Figure K-4  
Old-Growth Patch Map for Alternative 6



## Legend

- Patch Interiors
- Patch Edges
- State, Private and Encumbered Land



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# **Appendix L**

## **Riparian Management Area Buffer Widths**



## Riparian Management Area (RMA) Component Widths

Stream Class	Channel Type	Former Channel Type	No Commercial <sup>a</sup> Harvest Buffer (feet)	No Programmed <sup>b</sup> Harvest Buffer (feet)	Selective <sup>c</sup> Harvest Buffer (feet)	Planning Level Zone (feet)	Total RMA <sup>d</sup> (feet)
I	AF1	B5 <sup>f</sup>	100	0	50	11	161
I	AF2	A3	100	0	0	7	107
I	AF8	D6	100	0	0	25	125
I	ES1	E4	100	0	0	14	114
I	ES2	E3	100	100	0	17	217
I	ES3	E2	100	100	0	20	220
I	ES4	E1	100	400	0	40	540
I	ES8	E5	100	400	0	33	533
I	FP1	C4 <sup>f</sup>	100	100	0	29	229
I	FP2	C6 <sup>f</sup> ,B8	100	100	0	30	230
I	FP3	B1	100	0	100	10	210
I	FP4	C1 <sup>f</sup>	100	100	0	25	225
I	FP5	C3 <sup>f</sup>	100	100	0	54	254
I	GO1	D8	100	100	0	43	243
I	GO2	D4 <sup>f</sup>	100	100	0	70	270
I	GO3	D5 <sup>f</sup>	100	100	0	108	308
I	GO4	D3 <sup>f</sup>	100	0	0	102	202
I	L	L	100	0	400	0	500
I	LC1	C2	100	0	0	27	127
I	LC2	C5	100	0	0	30	130
I	MC1	B4	100	0	50	9	159
I	MC2	B6	100	0	0	15	115
I	MC3	B7	100	0	0	16	116
I	MM1	B2	100	0	0	9	109
I	MM2	B3 <sup>f</sup>	100	0	0	73	173
I	PA1	L1	100	0	0	8	108
I	PA2	L2 <sup>f</sup>	100	50	0	30	180
I	PA3	L4	100	0	0	20	120
I	PA4	L5	100	0	0	27	127
I	PA5	L3	100	0	0	13	113
IIa <sup>e</sup>	AF1	B5 <sup>f</sup>	100	0	50	11	161
IIa	AF2	A3	100	0	0	7	107
IIa	AF8	D6	100	0	0	25	125
IIa	GO4	D3 <sup>f</sup>	100	0	0	102	202
IIa	L (>50ac)	L (>50ac)	100	0	400	0	500
IIa	L (<50ac)	L (<50ac)	100	0	0	0	100
IIa	L (<5ac)	L (<5ac)	100	0	0	0	100
IIa	LC1	C2	100	0	0	27	127
IIa	LC2	C5	100	0	0	30	130



# Appendix L

Stream Class	Channel Type	Former Channel Type	No Commercial <sup>a</sup> Harvest Buffer (feet)	No Programmed <sup>b</sup> Harvest Buffer (feet)	Selective <sup>c</sup> Harvest Buffer (feet)	Planning Level Zone (feet)	Total RMA <sup>d</sup> (feet)
IIa	MC1	B4	100	0	50	9	159
IIa	MC2	B6	100	0	0	15	115
IIa	MC3	B7	100	0	0	16	116
IIa	MM1	B2	100	0	0	9	109
IIa	MM2	B3	100	0	0	73	173
IIa	PA1	L1	100	0	0	8	108
IIa	PA2	L2 <sup>f</sup>	100	50	0	30	180
IIa	PA3	L4	100	0	0	20	120
IIa	PA4	L5	100	0	0	27	127
IIa	PA5	L3	100	0	0	13	113
IIb <sup>c</sup>	AF1	B5 <sup>f</sup>	100	0	0	61	161
IIb	AF2	A3	100	0	0	0	107
IIb	AF8	D6	100	0	0	25	125
IIb	GO4	D3 <sup>f</sup>	100	0	0	102	202
IIb	L (<50ac)	L (<50ac)	100	0	400	0	500
IIb	L (<50ac)	L (<50ac)	100	0	0	0	100
IIb	L (<5ac)	L (<5ac)	100	0	0	0	100
IIb	LC1	C2	100	0	0	27	127
IIb	LC2	C5	100	0	0	27	127
IIb	MC1	B4	100	0	50	9	159
IIb	MC2	B6	100	0	0	15	115
IIb	MC3	B7	100	0	0	16	116
IIb	MM1	B2	100	0	0	9	109
IIb	MM2	B3 <sup>f</sup>	100	0	0	73	173
IIb	PA1	L1	100	0	0	8	108
IIb	PA2	L2 <sup>f</sup>	100	50	0	30	180
IIb	PA3	L4	100	0	0	20	120
IIb	PA4	L5	100	0	0	27	127
IIb	PA5	L3	100	0	0	13	113
III	AF1	B5 <sup>f</sup>	0	25	0	136	161
III	AF2	A3	0	25	0	82	107
III	AF8	D6	0	25	0	100	125
III	GO4	D3 <sup>f</sup>	0	0	25	127	152
III	HC1	A6	0	0	0	107	107
III	HC2	A7	0	0	0	109	109
III	HC3	A2	0	0	0	112	112
III	HC4	A5	0	0	0	109	109
III	HC5	A4	0	0	0	107	107
III	HC6	A1	0	0	0	110	110
III	HC8	D7	0	0	0	132	132
III	HC9	D2	0	0	0	128	128

Stream Class	Channel Type	Former Channel Type	No Commercial <sup>a</sup> Harvest Buffer (feet)	No Programmed <sup>b</sup> Harvest Buffer (feet)	Selective <sup>c</sup> Harvest Buffer (feet)	Planning Level Zone (feet)	Total RMA <sup>d</sup> (feet)
III	L (>50ac)	L (>50ac)	0	100	400	0	500
III	L (<50ac)	L (<50ac)	0	0	100	0	100
III	L (<5ac)	L (<5ac)	0	0	0	100	100
III	MC1	B4	0	0	0	159	159
III	MC2	B6	0	0	0	115	115
III	MC3	B7	0	0	0	116	116
III	MM1	B2	0	0	25	84	109
III	MM2	B3 <sup>f</sup>	0	0	0	173	173
III	PA3	L4	0	0	0	120	120
III	PA4	L5	0	0	0	127	127
III	PA5	L3	0	0	0	113	113
—	Beach	n/a	0	500	0	0	500
—	Estuary	n/a	0	1,000	0	0	1,000

<sup>a</sup> No commercial harvest is allowed within this buffer, although limited clearing for road building is permitted.

<sup>b</sup> No programmed harvest is allowed within this buffer, however salvage and individual tree cutting may occur.

<sup>c</sup> Harvest of trees is allowable using selective harvest methods or uneven-aged management within this buffer.

<sup>d</sup> Total RMA is comprised of the four buffer components which at a minimum equals 100 feet plus 1/2 the channel width. The Planning Level Buffer is equal to 1/2 the channel width plus the difference between the minimum 100 foot RMA requirement and the first 3 buffers.

<sup>e</sup> IIa - denotes Class II stream that flows directly into a Class I stream

IIb - denotes Class II stream that does not flow directly into a Class I stream

<sup>f</sup> These channel types receive a minimum 150 foot buffer. This decision was documented by the TLMP Planning Team in a memo dated 1/18/89.

Buffer widths are displayed for one side of the channel; this number must be multiplied by two to determine total buffer width.

Buffer widths are measured as horizontal distance from the edge of streams and lakes, and as horizontal distance inland from mean high tide for beach fringe and estuaries. Actual buffers prescribed in the field may be wider than indicated, depending on site specific analysis. See Forest Service Management Prescriptions (TLMP Draft Revision 1991) for additional requirements.





# **Appendix M**

## **Perspective Plots**

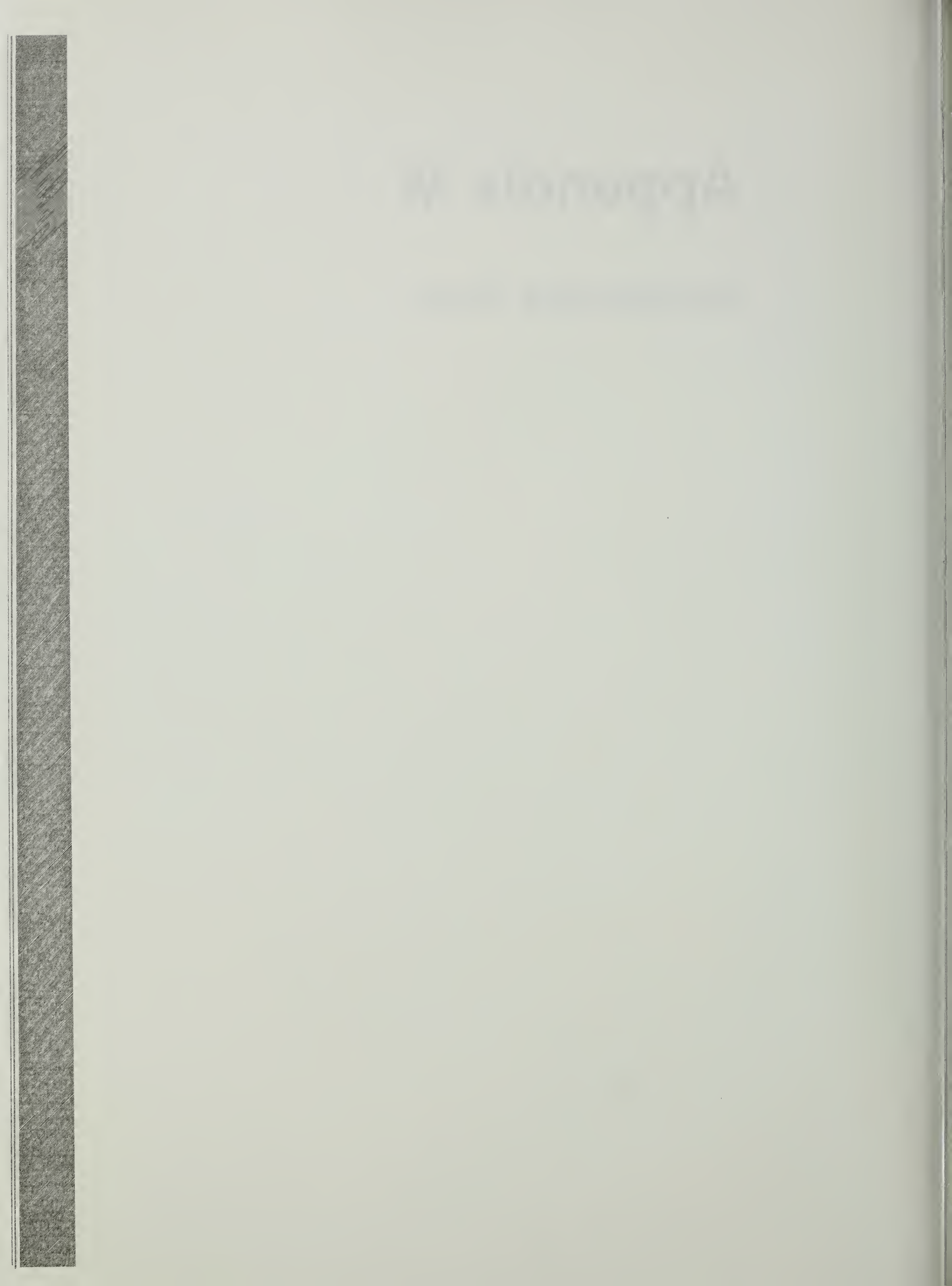


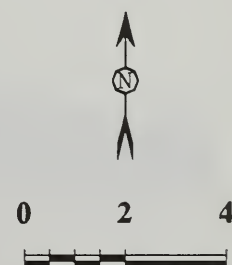
Figure M-1

## Perspective Plot Location Map



## Legend

- Cruise Ship Route
- Exchange Cove
- Port Protection
- Red Bay
- Red Lake
- Salmon Bay
- Salmon Bay Lake
- West Coast Waterway
- Whale Passage



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Figure M-2

## Red Bay Perspective Plots

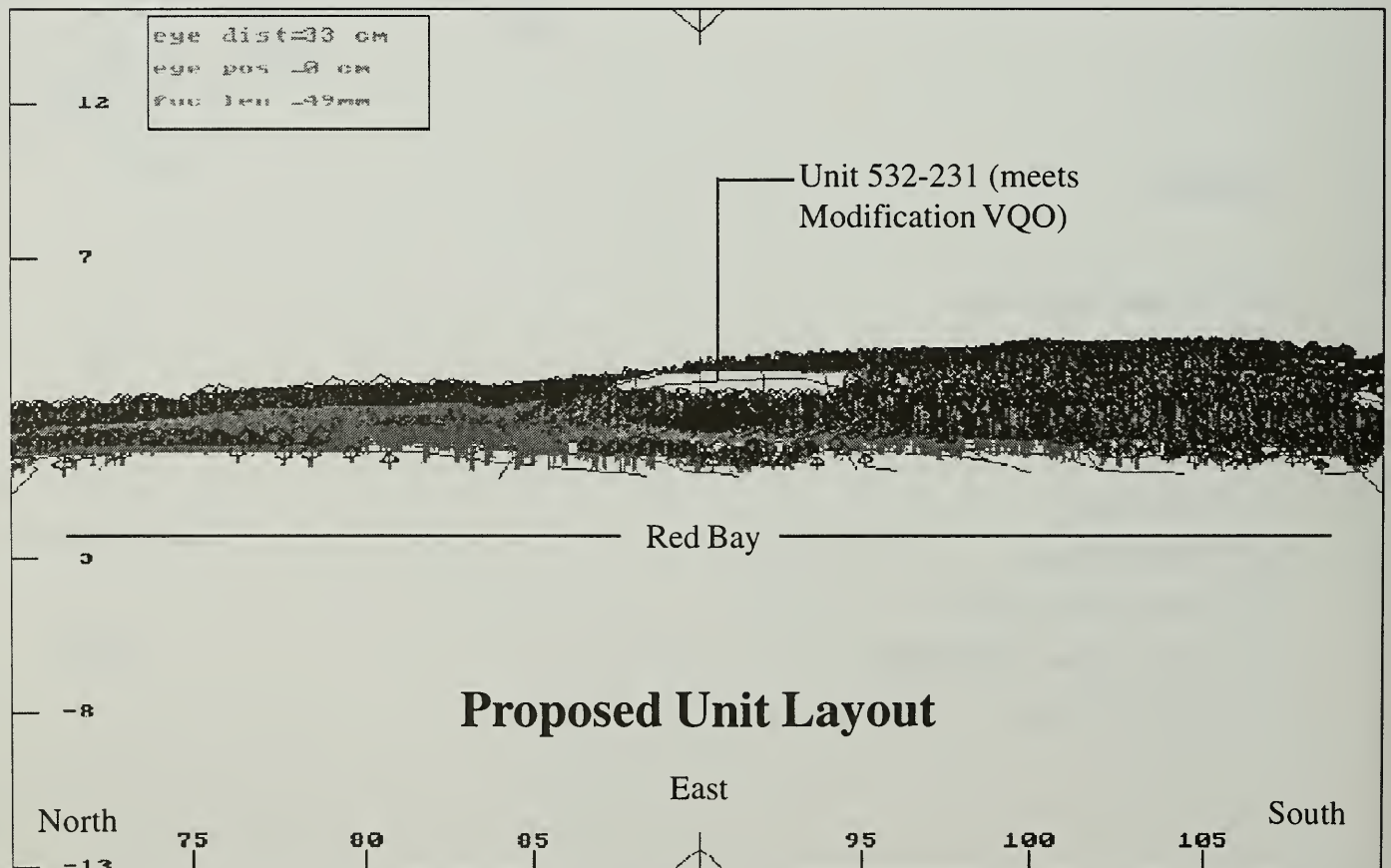
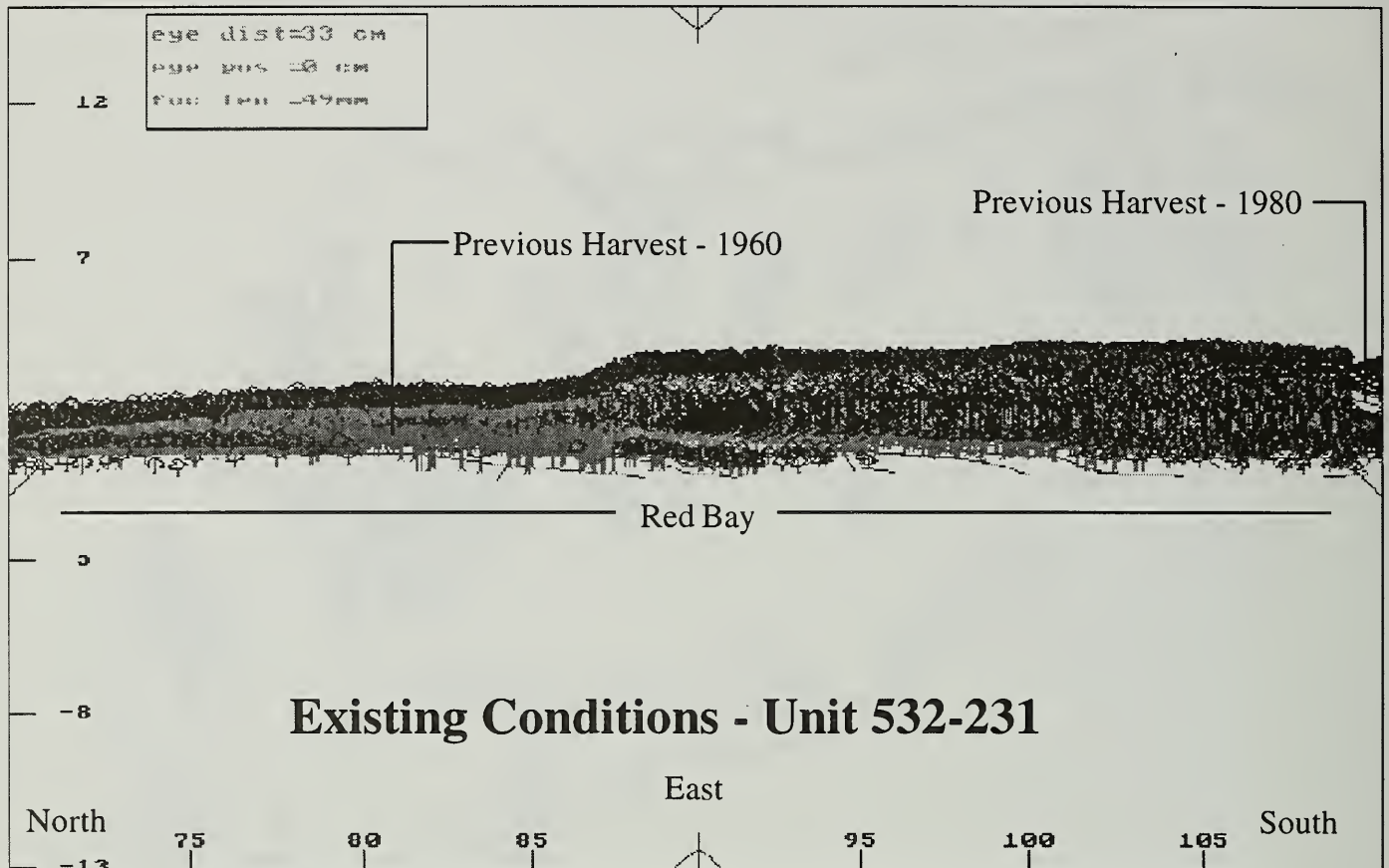


Figure M-3

## Whale Passage Resort Perspective Plots

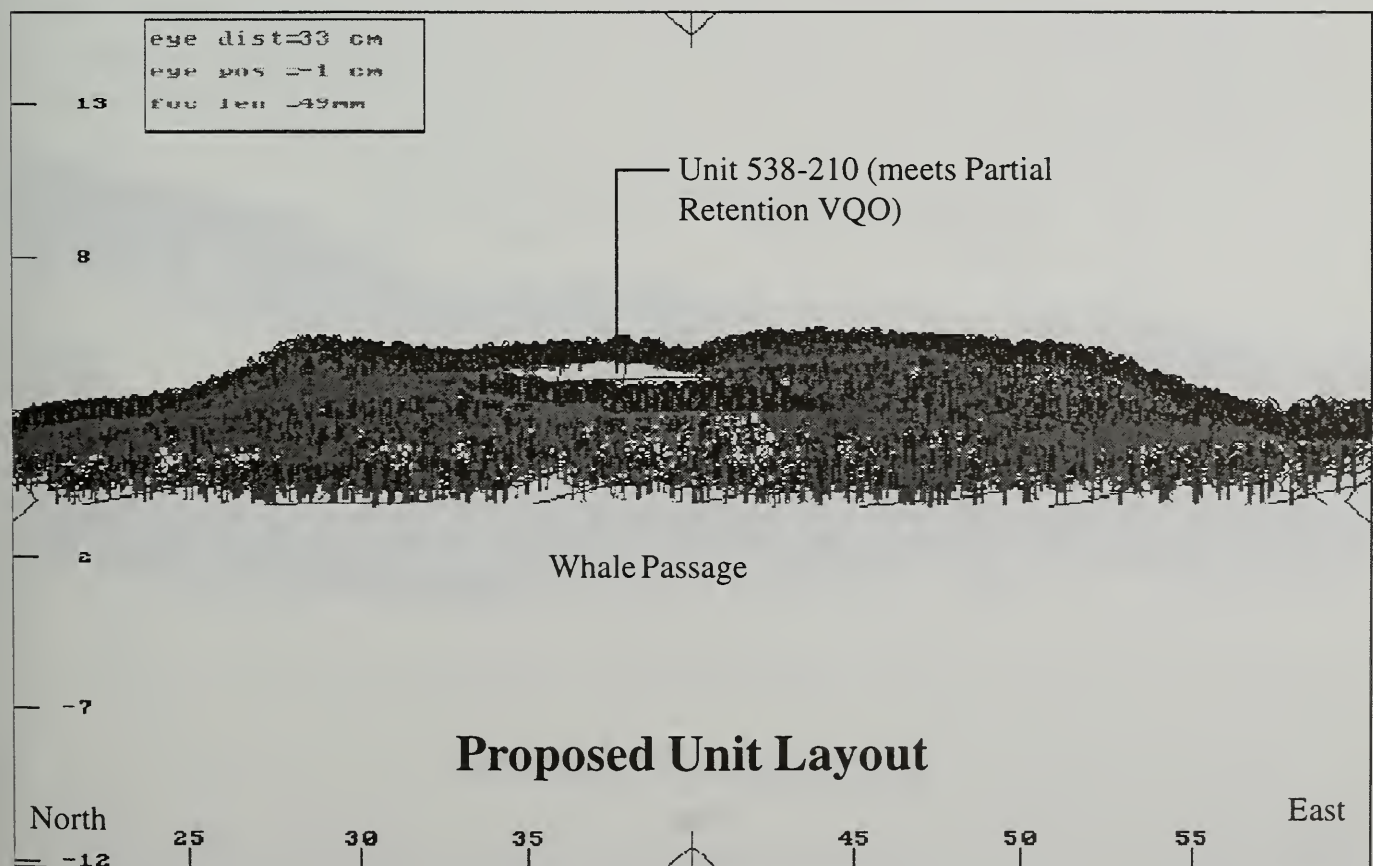
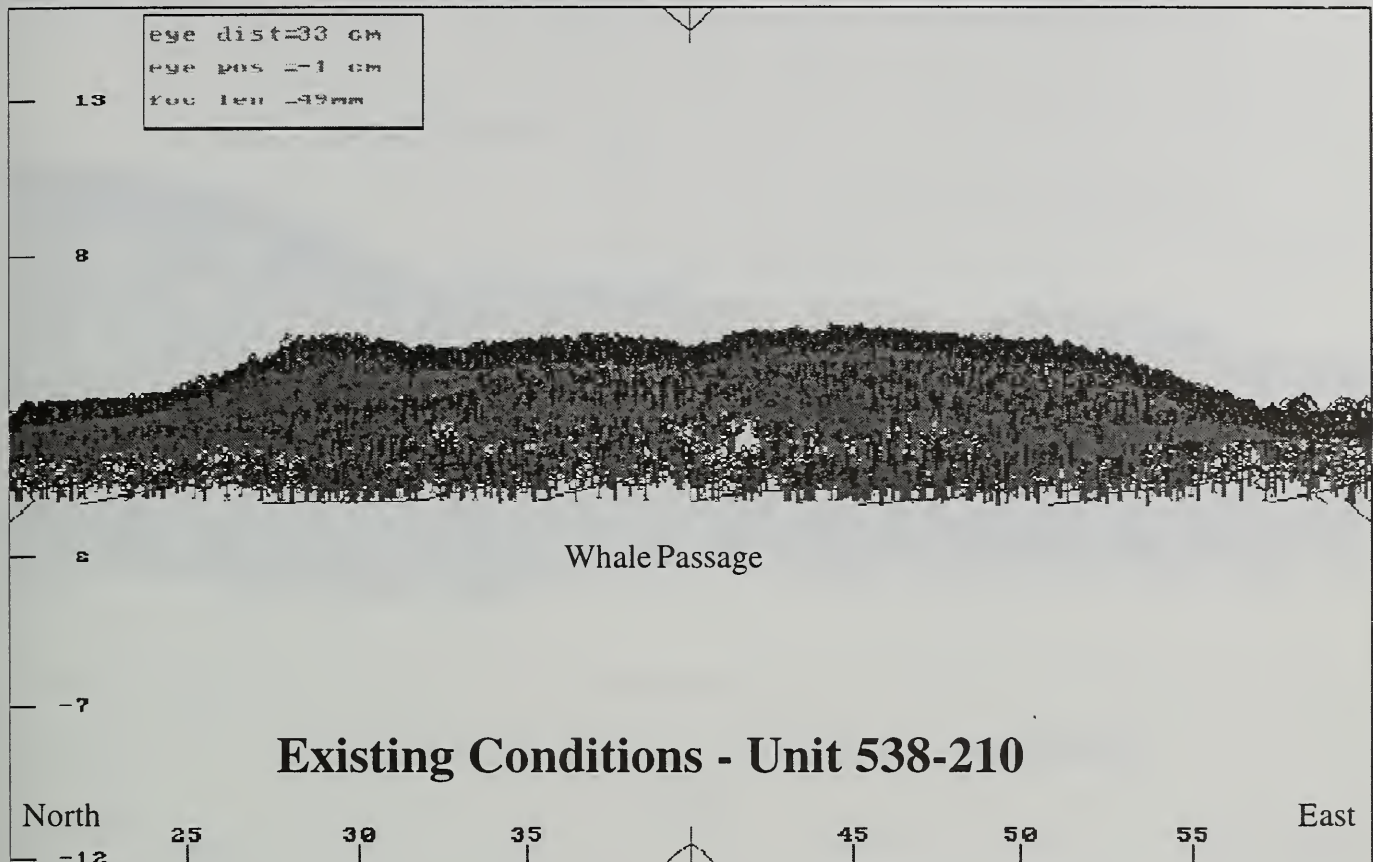




Figure M-4

## Exchange Cove Perspective Plots

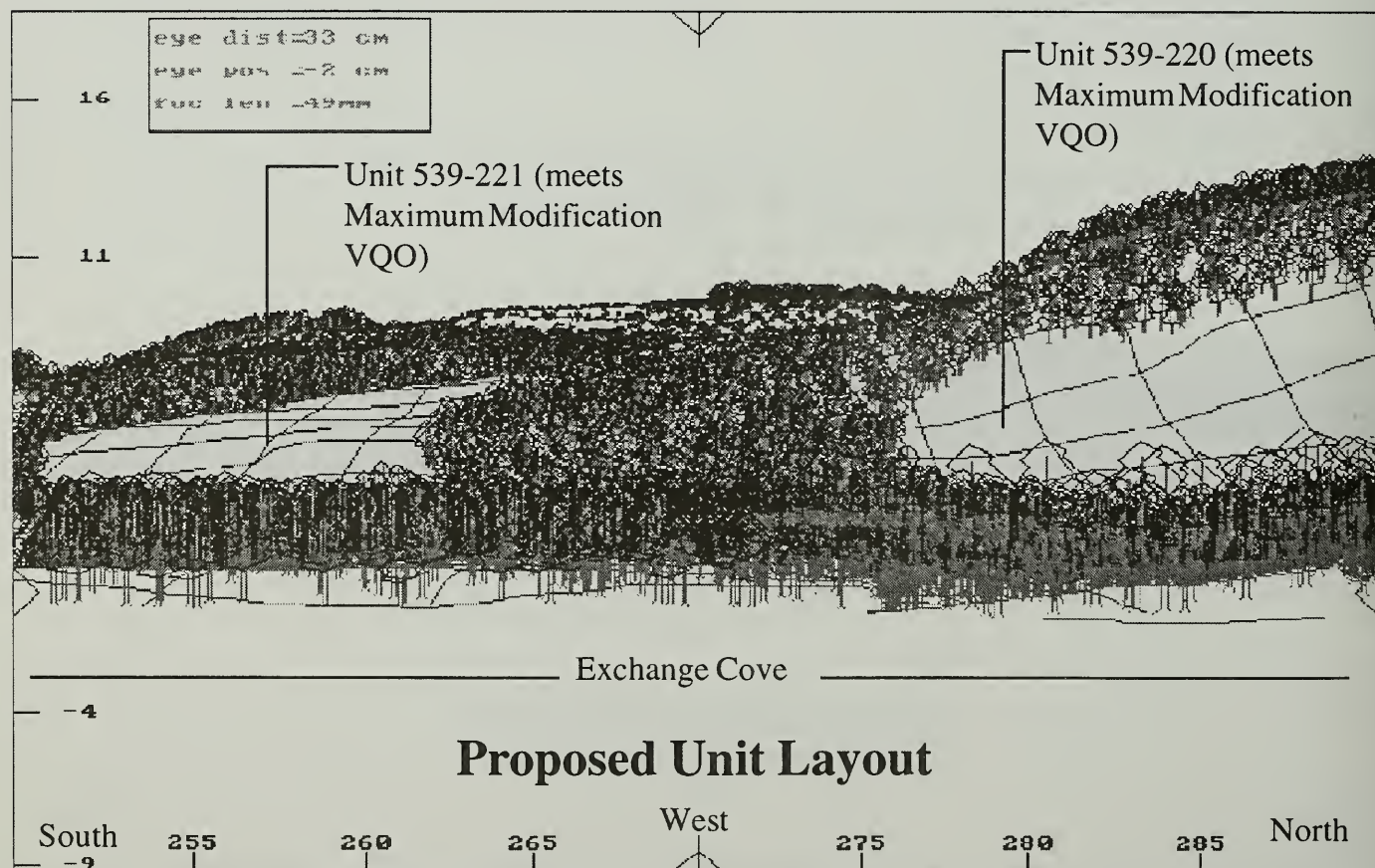
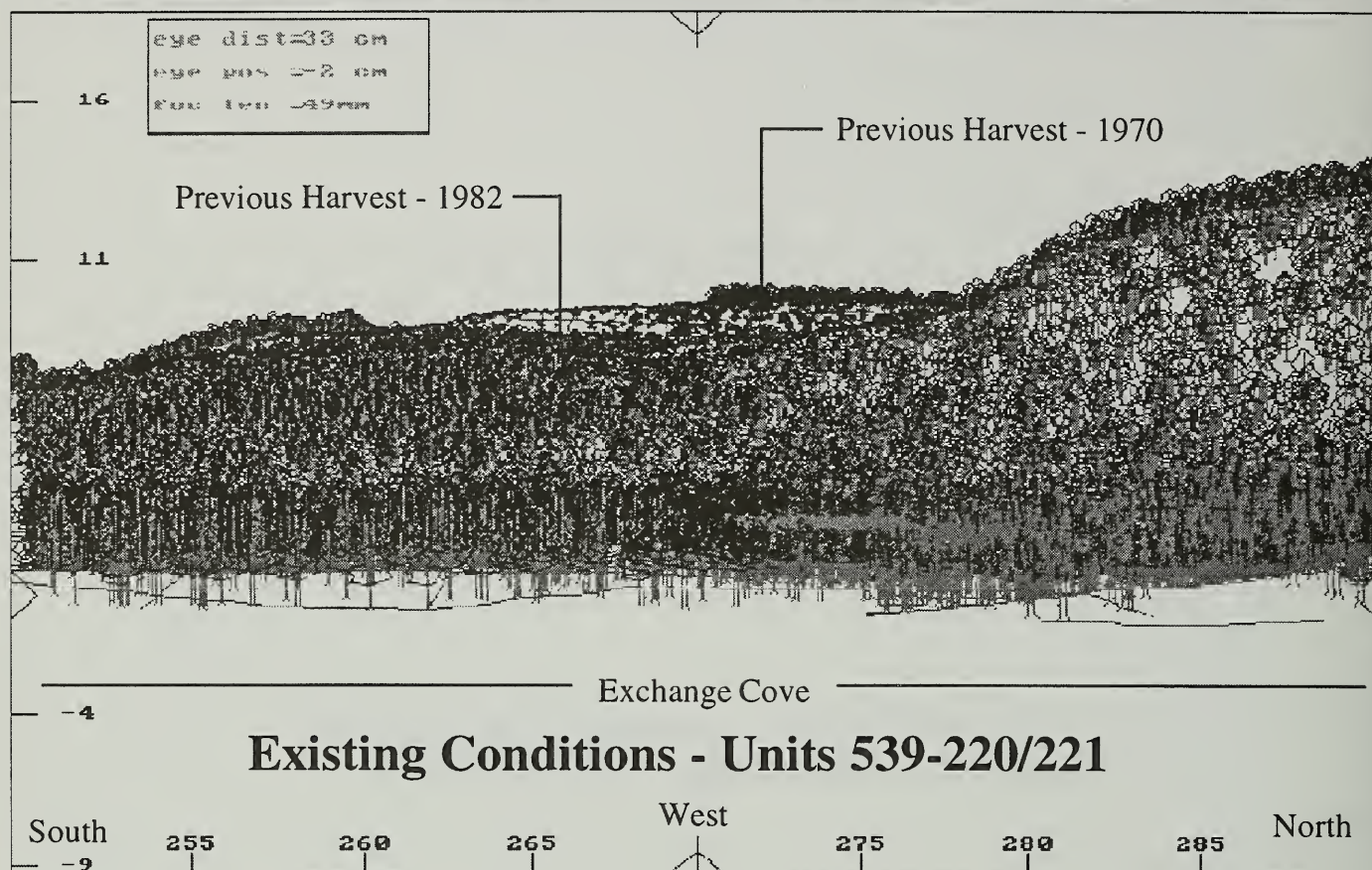




Figure M-5

## Cruiseship Route Perspective Plots

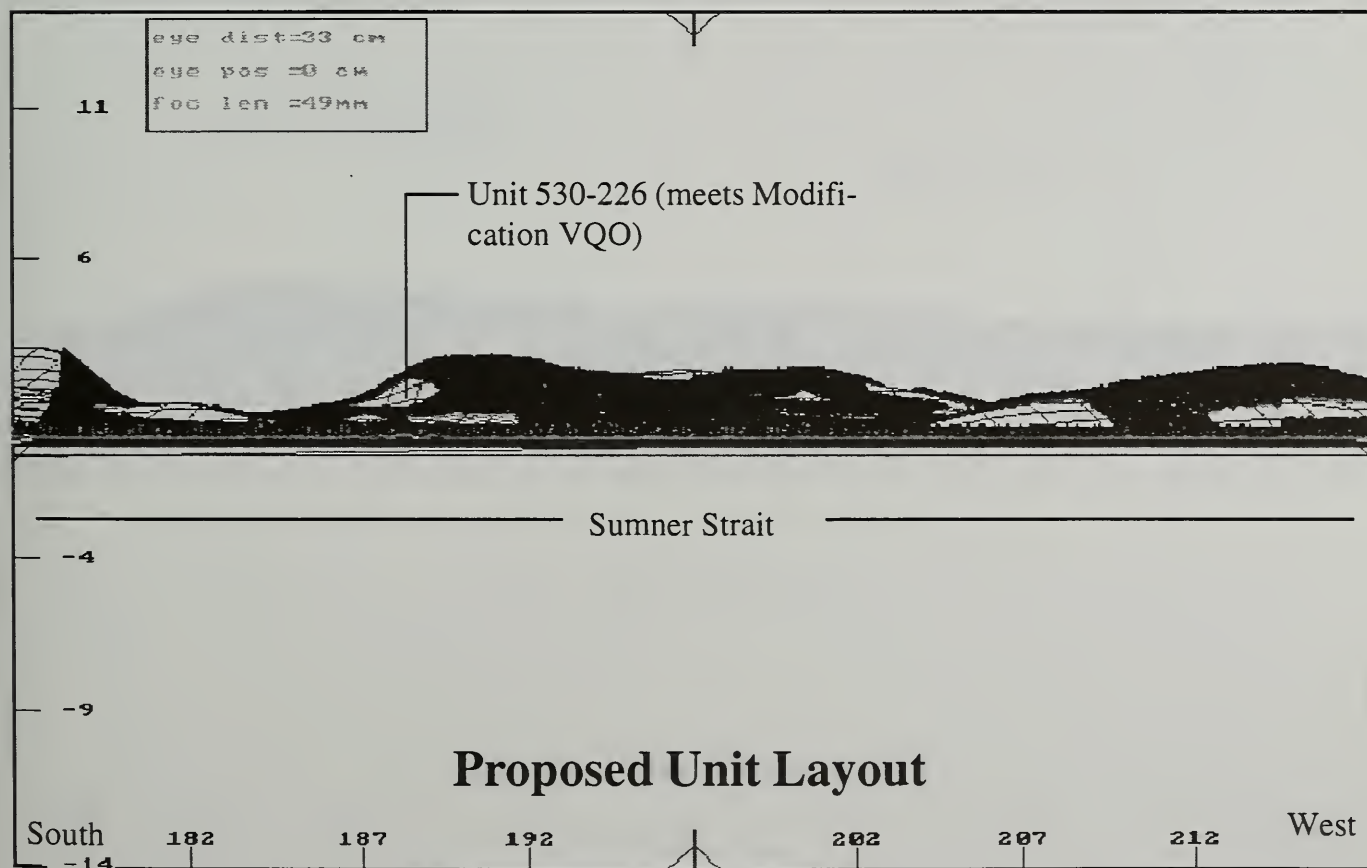
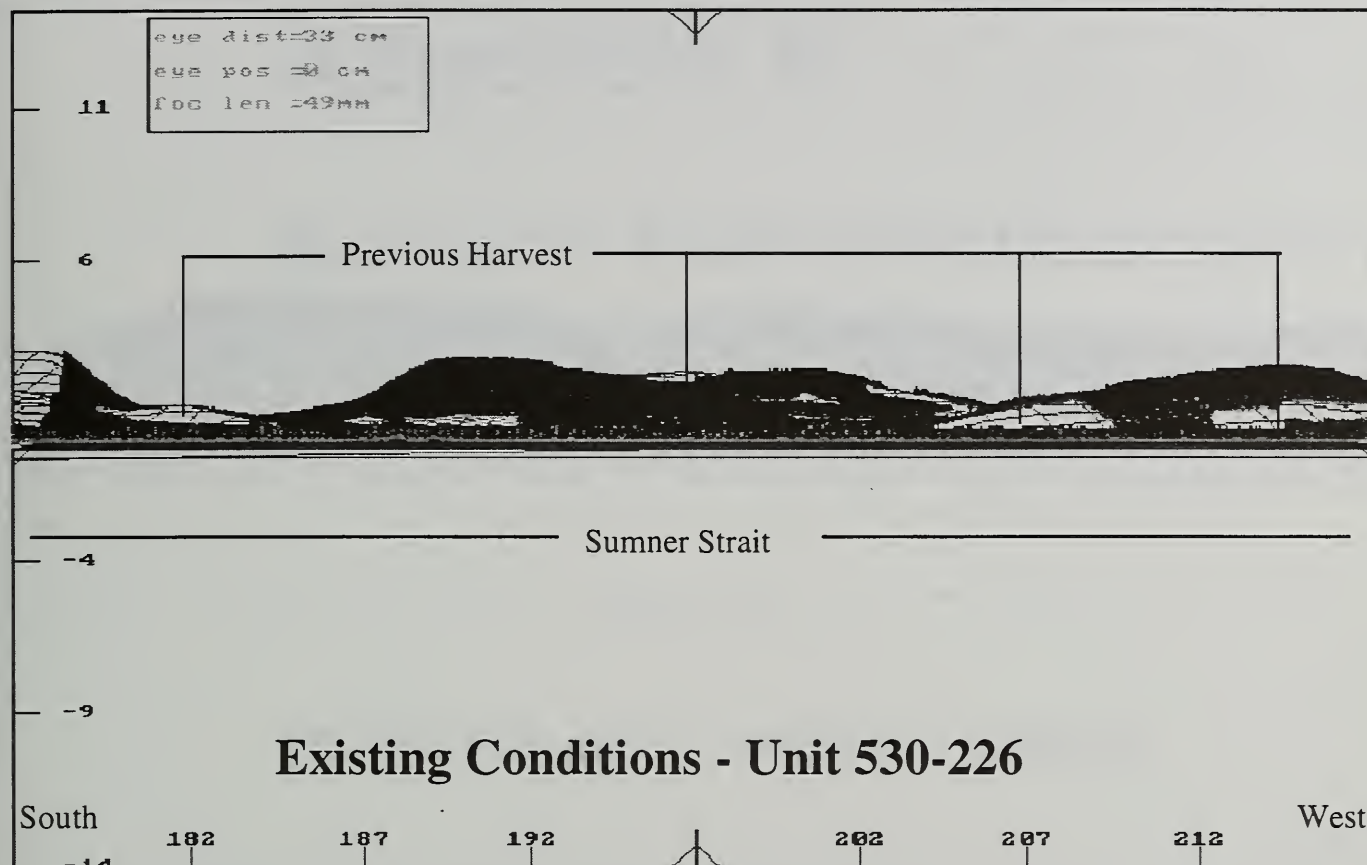
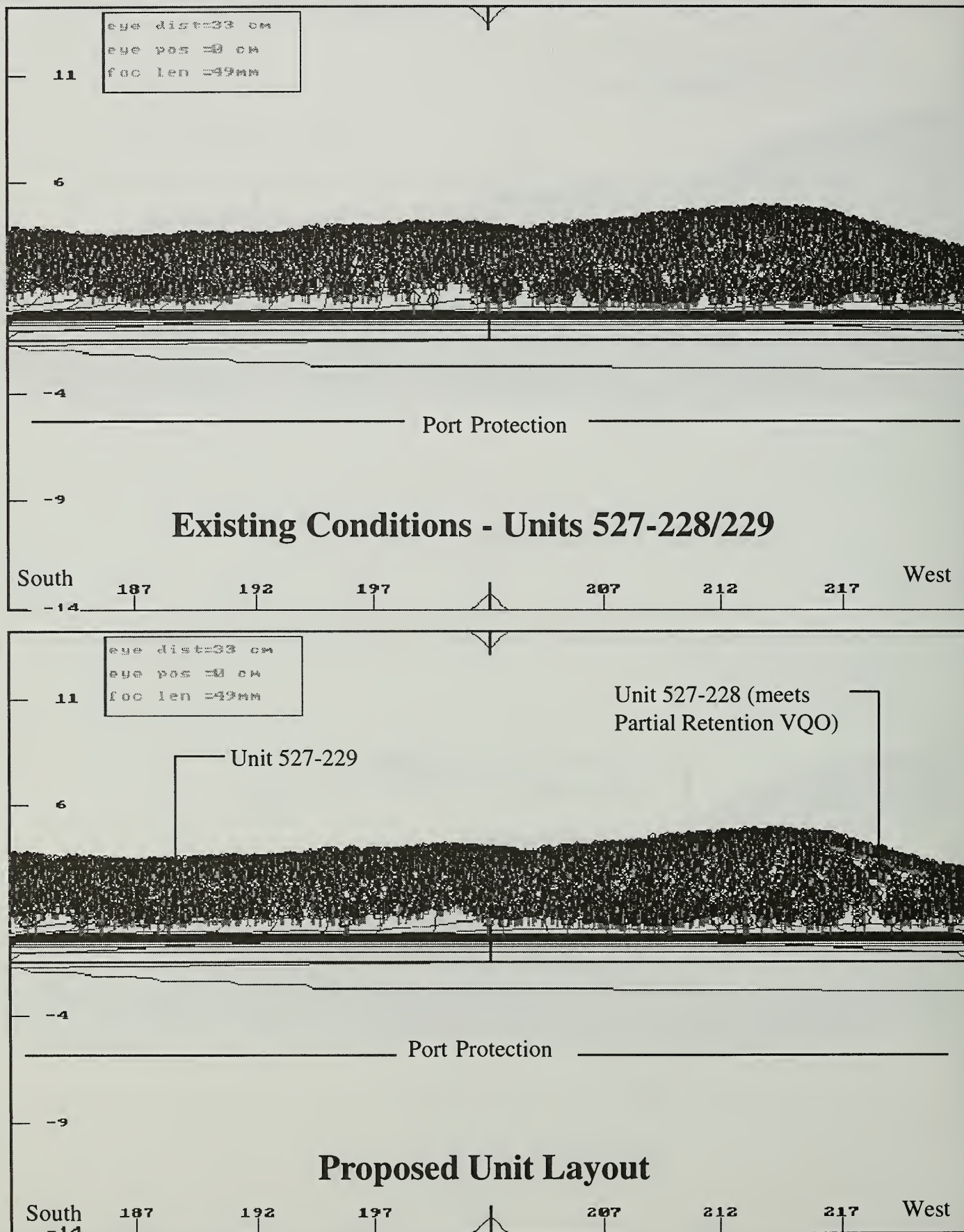


Figure M-6  
Port Protection Perspective Plots



# **Appendix N**

## **Biological Assessment/Biological Evaluation**



# Appendix A

## Appendix A.1: Theoretical Background

### 1. Introduction

### 2. Methodology

### 3. Results

### 4. Conclusion

**BIOLOGICAL ASSESSMENT  
AND  
BIOLOGICAL EVALUATION  
FOR THE LAB BAY TIMBER SALE**

**USDA FOREST SERVICE  
TONGASS NATIONAL FOREST  
KETCHIKAN AREA**

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## TABLE OF CONTENTS

Identification of TES Species and/or Critical Habitats Within the Project Area .....	1
Federal Endangered, Threatened, Candidate, and Sensitive Species.....	1
Field Reconnaissance .....	3
Endangered Species Assessments.....	5
Humpback Whale ( <i>Megaptera novaeangliae</i> ).....	5
American Peregrine Falcon ( <i>Falco peregrinus anatum</i> ) .....	8
Threatened Species Assessments .....	9
Steller Sea Lion ( <i>Eumetopias jubatus</i> ) .....	9
Candidate Species Assessments.....	11
Queen Charlotte Goshawk ( <i>Accipiter gentilis laingi</i> ).....	11
Marbled Murrelet ( <i>Brachyramphus marmoratus</i> ) .....	14
Alexander Archipelago Wolf ( <i>Canis lupus ligoni</i> ) .....	20
Arctic Peregrine Falcon ( <i>Falco peregrinus tundrius</i> ).....	21
Harlequin Duck ( <i>Histrionicus histrionicus</i> ).....	22
Olive-sided Flycatcher ( <i>Contopus borealis</i> ).....	23
Spotted Frog ( <i>Rana pretiosa</i> ) .....	24
<i>Carex lenticularis</i> var. <i>dolia</i> .....	24
Sensitive Species Assessments .....	24
Peale's Peregrine Falcon ( <i>Falco peregrinus pealei</i> ) .....	24
Osprey ( <i>Pandion haliaetus</i> ).....	25
Trumpeter Swan ( <i>Cygnus buccinator</i> ).....	26
<i>Glyceria leptostachya</i> .....	26
<i>Platanthera chorisiana</i> .....	26
<i>Romanzoffia unalaschensis</i> .....	27
<i>Senecio moresbiensis</i> .....	27
<i>Hymenophyllum wrightii</i> .....	27
<i>Isoetes truncata</i> .....	28
<i>Ligusticum calderi</i> .....	28
<i>Platanthera gracilis</i> .....	28
<i>Poa laxiflora</i> .....	29
<i>Ranunculus orthorhynchus</i> var. <i>alaschensis</i> .....	29
Literature Cited.....	30
Documentation of Correspondence with Other Agencies .....	36

## TABLES

Table 1	Threatened, Endangered, Candidate, and Sensitive Species Occurring on or Near the Lab Bay Project Area.....	2
Table 2	Summary Analysis of Effects on TES Species Occurring In or Near the Lab Bay Project	7
Table 3	Old Growth Acreage Farvested, by Alternative .....	19
Table 4	Average Patch Size Effectivenss (PSE) Indexes for the Marbled Murrelet in the Project Area by Alternative .....	20

## FIGURES

Figure 1	Goshawk Home Ranges Within the Project Area .....	17
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# Appendix N

## Biological Assessment And Biological Evaluation

This combined Biological Assessment (BA) and Biological Evaluation (BE) was prepared for the Lab Bay Project Area as required by Section 7 of the Endangered Species Act of 1973, as amended, the USDA Forest Service threatened, endangered, and sensitive plant and animal species policy (FSM 2670), and the National Forest Management Act. The assessment documents the occurrence of and project effects on species that are Federally listed or proposed for threatened or endangered status. In addition, candidate plant and animal species (recently updated by USFWS to candidate and species of concern) within the Project Area, and species listed as sensitive by the Forest Service, are addressed as required for all internal programs and activities (FSM 2672.4).

The 174,357-acre Lab Bay Project Area includes 159,845 acres of National Forest System land, and is located at the northern tip of Prince of Wales Island on the Thorne Bay Ranger District. It includes Management Areas K01 (VCU's 527, 528, 529, 530, 532, 533, 534, and 534.1), K02 (VCU's 534.2 and 534.3), K03 (VCU's 531.1, 534.4, 535, 536, 537.1, 538, 539, 540, and 551), and K03A (VCU's 528.1 and 531.3). The Project Area includes all of Wildlife Analysis Areas (WAA's) 1528 and 1529, and the majority of 1527 and 1530. The Tongass National Forest, Ketchikan Area, proposes harvest of approximately 85 MMBF of timber from approximately 4,550 acres, construction or reconstruction of up to 86 miles of road, and use of up to three existing and one proposed log transfer facility. The Environmental Impact Statement currently being prepared for the Project includes evaluation of six harvest alternatives. Alternatives range from no harvest to harvest of 102 MMBF.

This BA/BE has been completed for 26 plant and animal species. It covers the endangered humpback whale (*Megaptera novaeangliae*) and American peregrine falcon (*Falco peregrinus anatum*), the threatened Steller sea lion (*Eumetopias jubatus*), five candidate bird species, two candidate mammal species, one candidate frog species, and two candidate plant species. It also addresses three bird species and 10 plant species on the Forest Service Region 10 sensitive species list, but not listed as endangered, threatened, or candidate species under the Endangered Species Act of 1973, as amended.

### Identification of TES Species and/or Critical Habitats Within the Project Area

#### Federal Endangered, Threatened, Candidate, and Sensitive Species

Federally listed threatened and endangered species are those species formally listed by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) under



the authority of the Endangered Species Act of 1973, as amended. An endangered species is defined as one which is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as one which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate species are those being considered for listing as threatened or endangered by the USFWS or NMFS. A Category 1 Candidate is one for which the agency has sufficient data in its possession to support listing the species as threatened or endangered. Category 2 candidate species are those species for which there is information indicating the species might qualify for endangered or threatened status, but for which further evaluation is needed. Category 3 candidate species are species that were considered for listing as endangered or threatened, but are no longer under consideration. The USFWS has recently changed its nomenclature for Candidate species. Category 1 Candidate species are now referred to as Candidate species. Category 2 species are now referred to as Species of Concern, and Category 3 species have been dropped from consideration (USDI Fish and Wildlife Service 1996). However, throughout this document we will continue to refer to species by their former designation.

Species listed as endangered or threatened are provided statutory protection under the Endangered Species Act of 1973, as amended; candidate species are not. Therefore, under the Endangered Species Act, agencies technically have no legal obligation to take action on Category 2 or 3 species. Although the USFWS and NMFS do not have legal authority to regulate management of National Forest System lands for candidate species, the Forest Service has agreed to coordinate closely with the USFWS and NMFS in an effort to prevent candidate species from declining to where they need to be listed as threatened or endangered (Memorandum of Understanding, January 25, 1994)

Sensitive species, as defined by the Forest Service, are those plant and animal species whose population viability is a concern as evidenced by: (a) significant current or predicted downward trend in population numbers or density, or (b) significant downward trend in habitat capability that would reduce the species existing distribution (Forest Service Manual [FSM] 2670, titled "Threatened, Endangered, and Sensitive Plants and Animals").

The State of Alaska also has an Endangered Species Law which authorizes the Commissioner of the Alaska Department of Fish and Game (ADF&G) to list Alaska endangered species.

A summary of threatened, endangered, candidate, and sensitive species of animals under the jurisdiction of the USFWS, NMFS, or USFS, occurring on or near the Lab Bay Project Area, is provided in Table 1.

**Table 1**  
**Threatened, Endangered, Candidate, and Sensitive Species Occurring on or Near the Lab Bay Project Area**

SPECIES	STATUS <sup>1</sup>		
	ESA	<u>Federal</u> Forest Service	<u>State</u>
<b>Animals</b>			
Humpback Whale	E		E
American Peregrine Falcon	E		E
Steller Sea Lion	T		
Queen Charlotte Goshawk	2 (SC <sup>2</sup> )	S	C
Marbled Murrelet	2 (SC <sup>2</sup> )		C
Alexander Archipelago Wolf	2 (SC <sup>2</sup> )		
Arctic Peregrine Falcon	2 (SC <sup>2</sup> )		E
Harlequin Duck	2 (SC <sup>2</sup> )		
Olive-sided Flycatcher	2 (SC <sup>2</sup> )		
Spotted Frog	2 (SC <sup>2</sup> )		

Peale's Peregrine Falcon	S
Osprey	S
Trumpeter Swan	S

#### Plants

<i>Carex lenticularis</i> var. <i>dolia</i>	2 (SC <sup>2</sup> )	S
<i>Glyceria leptostachya</i>		S
<i>Hymenophyllum wrightii</i>		S
<i>Isoetes truncata</i>		S
<i>Ligusticum calderi</i>		S
<i>Platanthera chorisiana</i>		S
<i>Platanthera gracilis</i>		S
<i>Poa laxiflora</i>		S
<i>Ranunculus orthorhynchus</i>		S
var. <i>alaschensis</i>		
<i>Senecio moresbiensis</i>		S
<i>Romanzoffia unalaschensis</i>		S

<sup>1</sup> E = Endangered, Federal or State; T = Threatened; 2 = Category 2 Candidate; 3 = Category 3 Candidate; C = Candidate, State; S = Sensitive, Forest Service Region 10.

<sup>2</sup> Current USFWS nomenclature; SC = Species of Concern

There has been no critical habitat officially designated for any of these species at this time in Southeast Alaska, except for specific rookery (mating and pupping) and haulout locations for Steller sea lions (50 CFR part 226, August 27, 1993).

The USFWS identified the northern goshawk and marbled murrelet as species of concern that may occur within the Lab Bay Project Area (USFWS letter, March 5, 1992). In a more recent letter, the USFWS identified the Queen Charlotte goshawk, Alexander Archipelago wolf, marbled murrelet, harlequin duck, and olive-sided flycatcher as Category 2 candidate species that may occur within the Lab Bay Project Area (USFWS letter, June 6, 1995). In addition, the endangered American peregrine falcon may migrate through the Prince of Wales Island area. The USFWS also identified that the spotted frog, a Category 2 candidate species, should be considered in planning (USFWS letter, April 17, 1992). The humpback whale and Steller sea lion were listed by NMFS in an assessment of Threatened and Endangered species that may occur in or adjacent to the Project Area (NMFS letter, June 28, 1995). NMFS completed a final recovery plan for the humpback whale in 1991. Critical habitat has not been designated for the humpback whale. Critical habitat, in terms of specific rookery and haulout locations, has been designated for the Steller sea lion (50 CFR part 226). No critical habitat is designated on or adjacent to Prince of Wales Island (NMFS letter, January 26, 1994).

No threatened or endangered plant species are known to occur in the Project Area. One Category 2 Candidate species, *Carex lenticularis* var. *dolia*, could potentially occur within the Project Area, but have not been documented there. In addition, of the 22 plant species designated as sensitive in Region 10 (USDA Forest Service 1995a), 10 could potentially occur within the Project Area. Although, none of these species have been documented in the Project Area, seven have been discovered on Prince of Wales Island.

No fish species known to occur in the Project Area have been determined to be threatened, endangered, candidate, or sensitive.

## Field Reconnaissance

### Wildlife Species

During the 1992 field season wildlife biologists performed walk-through evaluations of proposed harvest units and recorded observations of wildlife species and habitats, wetlands, and

TES species and habitats. Wildlife biologists conducted general inventories on approximately 70 percent of the units; the remaining units were evaluated for wildlife by other resource specialists who had been cross-trained by the lead wildlife biologist. Follow-up visits were conducted by a wildlife biologist to locations of reported sightings and/or auditory detections of goshawks. These surveys followed the goshawk inventory protocol developed by the Region 10 Forest Service (USDA Forest Service 1992). Additional goshawk surveys were conducted during the 1993 (26 proposed harvest units), 1994 (5 proposed harvest units) and 1995 (48 proposed harvest units) field seasons. Surveys followed the 1992 or updated 1995 Forest Service inventory protocol (USDA Forest Service 1992, USDA Forest Service 1995). The 1995 goshawk surveys were conducted in and adjacent to proposed harvest units that contained at least 5 acres of high probability goshawk habitat (i.e. timber volume greater than 20,000 board feet per acre, low elevation, slopes less than 50 percent). In total, 79 proposed harvest units were surveyed for goshawks.

### **Plant Species**

Field inventories of potential harvest units and roads were conducted in 1992 between June 1 and August 30. In addition to the seven units surveyed by the Project botanist, field crews conducting wildlife surveys were trained by the botanist in identification of sensitive species, in order to expand the area of coverage. Survey intensity for the botanist-surveyed units was Level 4 (general, meaning that the surveyor walked through the unit more than once, and most of the unit was examined) or Level 5 (intuitive controlled, where the surveyor walked through the unit more than once, and in addition focused on specific areas within the unit). Survey intensity for units surveyed by wildlife biologists was Level 2 (cursory, meaning that the surveyor walked through the unit but that the entire unit was not examined) or Level 4. Wildlife biologists visited approximately 70 percent of the 180 proposed harvest units during 1992.

Between July 1 and July 22, 1995, 17 units were inventoried by the Project botanist or a terrestrial biologist trained and experienced in rare plant surveys. These surveys were conducted at intensity Level 4 (described above) or Level 5 (described above), in accordance with Forest Service protocol (USDA Forest Service 1995b).

Habitats occurring outside proposed harvest units were also sampled. These included maritime beaches, subalpine fir plant communities, and high-vulnerability karst landscapes characterized by grikes, runnels and sinkholes. Areas with high probability of supporting sensitive plant species were sampled at intensity Level 3 (limited focus, where the surveyor closely examined certain areas, but did not look at the rest of the area) or Level 4.

For each unit visited, habitat types, plant associations (Viereck et al. 1992) and plants encountered were recorded. Plants that could not be identified to species in the field were examined under a 10x-20x dissecting microscope in the office, and keyed using Hitchcock et al. (1955-1969), Hitchcock and Cronquist (1973), or Hulten (1968).



Table 2

## Summary Analysis of Effects on TES Species Occurring In or Near the Lab Bay Project Area

<u>Species</u>	<u>Outcome of Analysis</u>
<b>Endangered</b>	
Humpback Whale	Not Likely to Adversely Affect
American Peregrine Falcon	Not Likely to Adversely Affect
<b>Threatened</b>	
Steller Sea Lion	Not Likely to Adversely Affect
<b>Candidate Species (Species of Concern)</b>	
Northern Goshawk	May Adversely Affect
Marbled Murrelet	May Affect Individuals; No Adverse Effect to Population Viability
Alexander Archipelago Wolf	May Adversely Affect
Arctic Peregrine Falcon	Not Likely to Adversely Affect
Harlequin Duck	May Affect Individuals; No Adverse Effect to Population Viability
Olive-sided Flycatcher	No Adverse Effect
Spotted Frog	No Adverse Effect
<i>Carex lenticularis</i> var. <i>dolia</i>	Not Likely to Adversely Affect
<b>Sensitive Species</b>	
Peale's Peregrine Falcon	Not Likely to Adversely Affect
Osprey	No Adverse Effect
Trumpeter Swan	No Adverse Effect
<i>Glyceria leptostachya</i>	Not Likely to Adversely Affect
<i>Platanthera chorisiana</i>	Not Likely to Adversely Affect
<i>Romanzoffia unalaschensis</i>	Not Likely to Adversely Affect
<i>Senecio moresbiensis</i>	Not Likely to Adversely Affect
<i>Hymenophyllum wrightii</i>	May Adversely Affect
<i>Isoetes truncata</i>	No Adverse Effect
<i>Ligusticum calderi</i>	No Adverse Effect
<i>Platanthera gracilis</i>	Not Likely to Adversely Affect
<i>Poa laxiflora</i>	May Adversely Affect
<i>Ranunculus orthorhynchus</i> var. <i>alaschensis</i>	Not Likely to Adversely Affect

## Endangered Species Assessments

### Humpback Whale (*Megaptera novaeangliae*)

#### Distribution and Population

The population of humpback whales in the North Pacific is estimated to be 1,200 animals. They are more numerous in Southeast Alaskan waters than any other endangered whale and have been observed in every month of the year. Humpback whales range widely from the subarctic boundary north to the Chukchi Sea during the summer breeding season. Approximately 300-350 humpback whales inhabit Southeast Alaska waters during summer and autumn with the highest concentrations occurring in near shore waters during late August and September. In the

Project Area, humpback whales use Sumner Strait, Shakan Bay, California Bay, Clarence Strait, Kashevarof Passage, and have been observed in waters off Point Baker (Alaska Natural Heritage Program 1992).

Summer habitat areas are characterized by an available food supply, primarily euphausiids, herring, and capelin (Whitehead 1987). A total of 13 fish species and 57 invertebrate species have been identified as potential prey of the humpback whale in Southeast Alaska (Wing and Krieger 1983).

### **Effects of Lab Bay Proposed Actions on Population or Habitat**

Six known or potential categories of human impacts to humpback whales were identified during the preparation of recovery plans: 1) hunting, 2) entrapment and entanglement in fishing gear, 3) collisions with ships, 4) acoustic disturbance, 5) habitat degradation, and 6) competition for resources with humans.

National Forest management activities which may have an effect on whale habitats or populations generally fall into the categories of acoustic disturbance and habitat degradation. These management activities include: 1) the development and use of log transfer facilities (LTF's) and their associated camps, 2) the movement of log rafts from log transfer facilities to mills, and 3) the potential development of other docks and associated facilities for mining, recreation, and other forest uses and activities. Generally, with the development and use of LTF's and other docking facilities for projects, there is an associated increase in recreational boating in the immediate vicinity.

Because the humpback is the most abundant whale to occur in Southeast Alaska waters, most of the data for whales in Southeast Alaska are associated with this species. The other seven species of whales are either present only seasonally as they migrate along the outer coastal areas, or are only occasionally found in the inside coastal waters of Southeast Alaska. The following discussion and analysis is primarily based on humpback whales, but is assumed to be applicable to the other species as well.

Construction and operation of LTF's and other docking facilities are restricted to small, very localized areas of the marine environment. There are three LTF's currently on the Project Area. In the past, there was an LTF at El Capitan, but it has been removed. An estimated six acres of marine benthic disturbance is associated with these existing LTF's. One new LTF is proposed for construction on Thorne Island under Alternatives 2, 3, and 5. Under Alternatives 4 and 6 no new LTF would be constructed.

There is little potential to directly affect whales with these facilities. During the summer of 1989, there was a report of a humpback whale entangled in some cables from an inactive LTF site on the Stikine Area. This is the only known incident related directly to LTF's.

Two potential indirect effects of LTF's and other docking facilities and associated activities have been identified: 1) effects on whale prey species, and 2) disturbances of whales by boat traffic associated with LTF's.

**Effects on Prey.** Nemoto (1970) noted that euphausiids and gregarious fish are the primary prey of humpbacks. Thirteen species of fish and 57 species of invertebrates were identified as humpback whale prey in Southeast Alaska. Humpbacks studied in Glacier Bay and Stephen's Passage-Frederick Sound were found most frequently in areas of high prey density (Wing and Krieger 1983).

Operation of the existing Lab Bay, Calder Bay, and Whale Pass LTF's requires U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (EPA) permits, and the State of Alaska tidelands permits. These LTF's were constructed prior to the development of the Alaska Timber Task Force LTF siting guidelines and the issuing of National Pollutant Discharge



Elimination System (NPDES) permits for individual LTF's. Existing LTF's in the project area are covered by a general NPDES permit for older LTF's in the Ketchikan Area. A Pollution Prevention Plan has been established for all LTF's in the Ketchikan Area, and the Lab Bay, Calder Bay, and Whale Pass LTF's are operated under the guide of this plan. The EPA also requires that the operators of these sites maintain a daily log of observations of pollution discharged into the water around the LTF.

Any new LTF constructed in the project area will require permits from the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency and the State of Alaska. An LTF is proposed for construction on Thorne Island under Alternatives 2, 3, and 5.

The effects of log transfer and storage is primarily on invertebrates. Crustaceans, shrimp and crab larvae seem especially sensitive (Pease 1973). These effects are caused by leachates (i.e., terpene, alpha-conindendric acid, alpha-conincendrin, hydroxymatairesinol, linoletic acid, and dehydroabientic acid) from the transfer and storage of logs. EPA measuring techniques may be required to monitor the LC<sub>50</sub> levels at each LTF (Peltier and Weber 1985) in order to ensure impacts are limited to the approved "zone of deposit". A local increase in the herring and herring egg fishery could also impact this food item.

**Effects from Disturbance.** Humpback whale response to nearby boating activity varies from no apparent response to pod (group) dispersal, sounding, breaching, evasive underwater maneuvers, and maintaining distance (Baker et al. 1982, Baker and Herman 1983). Disturbance by boat activity has been suggested as one of the possible causes of observed changes in whale distribution in Southeast Alaska. Direct pursuit of whales by boats, and frequent changes in boat speed and direction appear to elicit avoidance behaviors more frequently than other types of boat activity. However, whales may habituate to constant and familiar noise (Norris and Reeves 1978), and are commonly found in some areas of Southeast Alaska which have considerable boat traffic. Whether they are habituated to boat traffic has not yet been documented. Adverse effects from current levels of boat traffic also have not yet been documented.

Two basic types of boat activity associated with LTF's are log raft towing and recreational boating by workers. Log raft towing frequency varies between camps, seasons, and years, with an average of about one towing a week during the working season (USDA Forest Service 1989). Tug boats maintain relatively constant speeds and directions during log raft towing; constant speed and direction elicit less avoidance behavior from whales than other types of boating activity. Log raft towing routes are generally well established, and adverse effects from log raft towing have not been documented.

Recreational boating activity by camp residents varies between seasons, years, and camps of different sizes. This activity would be concentrated near LTF sites, other docking facilities, and camps. It is estimated that most recreational boating would occur within a few miles of the site, few trips would be made over 10 miles, and activity greater than 30 miles from a site would rarely occur. This boating would involve frequent changes in speed and direction and may include some whale pursuit, especially if the whales are within sight of the camp or an occupied boat. The effect of such recreational activity on whales would depend on many factors such as size of the bay, depth of the waters in the bay, number of boats, individual behavior responses of whales, etc. At the present time, there is not a quantifiable way to estimate these possible effects.

The following Forest-wide standards and guidelines have been developed for application on all Forest Service permitted or approved areas and have been incorporated into the Lab Bay FEIS from the TLMP Draft Revision (USDA Forest Service 1991b). They provide for the protection and maintenance of whale habitats as follows:

1. Avoid intentional aircraft flights below 500 feet above ground level in the known vicinity of whales on Forest Service permitted or approved activities, when weather ceilings permit.



2. Avoid intentional approach in a vessel of 100 feet or more in length to within 1/4 miles of whales on Forest Service permitted or approved activities, when safe passage exists.
3. Avoid intentional approach in a vessel of less than 100 feet in length to within 100 yards of whales on Forest Service permitted or approved activities, when safe passage exists.

Signs will be posted in logging camps and at public boat launches in the Project Area to describe legal restrictions and to educate the public and discourage the public from harassing marine mammals.

No direct adverse effects on whales from implementation of forest management activities are anticipated, although one whale is known to have become entangled in cables at a Log Transfer Facility (LTF) on the Stikine Area of the Tongass National Forest. Indirect effects may be associated with possible increased boating activity, but compliance with Forest Service and NMFS standards and guidelines should partially mitigate any adverse effects on whales resulting from proposed timber harvest alternatives. The Forest Service has no control over the routes taken by tugboats with log rafts, nor does the Forest Service control recreational boat activity.

Summary Analysis: Not Likely to Adversely Affect.

### **American Peregrine Falcon (*Falco peregrinus anatum*)**

#### **Distribution and Population**

All three of the recognized North American subspecies of peregrine falcon breed in Alaska (American Ornithologists' Union 1957). The American peregrine falcon breeds across interior Alaska south of the Brooks Range eastward across Canada and south to Baja California and Mexico including the south-central United States and the Atlantic Coast. The falcon is highly migratory, wintering as far south as northern Argentina and occurring in Southeast Alaska only during migration periods (Ambrose et al. 1988).

Peregrine falcons prefer habitats that support concentrations of shorebirds, waterfowl, and other small- to medium-sized birds (Johnsgard 1990). Coastal nest sites are typically associated with cliff ledges, head lands, or trees on islands, with the majority located on the ledges of vertical rocky cliffs (Campbell et al. 1990).

#### **Effects of Lab Bay Proposed Actions on Population or Habitat**

The American peregrine falcon occurs in Southeast Alaska only during migration. The primary reason for past declines in peregrine falcon populations was the proliferation of organochlorine pesticides, especially DDT and its principal metabolite DDE (Ratcliff 1969, Peskall 1976, Cade et al. 1971, Peskall and Kiff 1979). No organochlorine pesticides are authorized for use on the Tongass National Forest.

During the nonbreeding season, the peregrine falcon prefers habitats that support numbers of shorebirds, waterfowl, and other small to medium-sized birds (Johnsgard 1990). Coastal habitats at this time includes beaches, tidal flats, islands, marshes, estuaries, and lagoons. Presumably, birds in coastal Southeast Alaska use similar habitats and prey species during this time. Peregrine falcons breeding on the coast are usually found in the vicinity of colonial nesting seabirds (Campbell et al. 1990).

Actual migration routes and patterns, and foraging areas, have not been identified for American peregrines in Southeast Alaska, but could include large water bodies and adjacent uplands in and around the Lab Bay Project Area. The TLMP Draft Revision has developed Forest-wide standards and guidelines for protecting seabird rookeries and waterfowl concentration areas (USDA Forest Service 1991b) that have been incorporated into the Lab Bay FEIS. In addition,

a wide variety of shorebirds, waterfowl and passerine (perching and song) birds will continue to be available from numerous open and forested communities under all alternatives associated with the Lab Bay Project.

No direct adverse effects on peregrine falcon populations or their habitats are anticipated with any Forest management activities under any of the alternatives.

Summary Analysis: Not Likely to Adversely Affect.

## Threatened Species Assessments

### Steller Sea Lion (*Eumetopias jubatus*)

#### Distribution and Population

The range of the Steller sea lion extends from Hokkaido, Japan, through the Kurile Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, Gulf of Alaska, Southeast Alaska, south to central California. Of these geographic areas, the Gulf of Alaska and Aleutian Islands are the centers of distribution and abundance. Steller sea lions mate and give birth at rookeries in these areas.

Significant declines in sea lion numbers over the last 30 years have occurred in areas from the Kenai Peninsula to Kiska Island and also on the Kurile Islands, Russia. Population declines have been noted throughout most of their range for reasons that have not been determined. The cause of overall population declines has not been confirmed. Factors that have been suggested include 1) reduced prey availability; 2) disease; 3) direct kills as a result of previous commercial harvests; 4) continued subsistence harvest; and 5) disturbance (Hoover 1988). Although little information exists on population trends in Southeast Alaska, there is an indication that sea lion populations are stable or decreasing slightly in the area (Reeves et al. 1992).

When the sea lion was given emergency listing as a threatened species (April 5, 1990), buffer zones restricting human activities were established around rookeries west of 150 degrees west longitude (does not include Southeast Alaska). The closest Steller sea lion rookery to the Lab Bay Project Area is on Forrester Island, located west of Prince of Wales Island.

Although there are no documented occurrences of Steller sea lions in the Project Area (Alaska Natural Heritage Program 1992), a haulout has been located on the southern point of Grindall Island, adjacent to Kasaan Peninsula, approximately 55 miles south of the Project Area. Other local occurrences include Forrester, Lowri, Noyes, Timbered, Coronation, and Deer Islands; and North, Sealion, and Horn Rocks. Waters adjacent to Prince of Wales Island are used during seasonal migrations (Alaska Natural Heritage Program 1992).

Important sea lion food resources include walleye pollock, salmon, eulachon, cephalopod mullusks. Steller sea lions forage predominantly in nearshore areas and over the continental shelf.

#### Effects of Lab Bay Proposed Action on Population or Habitat

The NMFS provides a summary of factors affecting the Steller sea lion (USDC National Marine Fisheries Service 1991). These factors include: 1) reductions in the availability of food resources, especially pollock, which is the most important prey species for sea lions; 2) commercial harvest of sea lion pups; 3) harvest for subsistence, for public display and scientific research; 4) predation by sharks, killer whales, and brown bear; 5) disease; 6) inadequate existing regulations regarding quotas on the incidental harvesting of sea lions during commercial fishing operations; and 7) other natural or human incidences such as shooting adult



sea lions at rookeries, haulout sites, and in the water near boats. None of these factors are regulated by or fall within the jurisdiction of the Forest Service.

Southeast Alaska populations of Steller sea lions have not declined to the extent that other populations have. Harassment or displacement of sea lions from preferred habitats by human activities such as boating, recreation, aircraft, log transfer facilities, log raft towing, etc., is a concern with regard to long-term conservation of the sea lion in Southeast Alaska. Forest-wide standards and guidelines direct the Forest Service to prevent and/or reduce potential harassment of sea lions and other marine mammals due to activities carried out by or under the jurisdiction of the Forest Service, and these have been incorporated into the Lab Bay FEIS from the TLMP Draft Revision (USDA Forest Service 1991b). These Forest-wide standards and guidelines provide for the protection and maintenance of harbor seal, Steller sea lion, and sea otter habitats and are as follows:

1. Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act and the Endangered Species Act. "Taking" of marine mammals is prohibited; taking includes harassment, pursuit or attempting any such activity.
2. Locate facilities and concentrate human activities requiring Forest Service approval as far from known marine mammal haulouts, rookeries and known concentration areas as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
  - Facilities, camps, LTF's, campgrounds and other developments should be located 1 mile from known haulouts, and farther if the development is large.
  - For aircraft flights on Forest Service approved projects, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1,000 feet (305 meters) within 0.5 miles (800 meters) of the haulouts.
  - For boat traffic on Forest Service approved projects, remain at least 0.5 miles (800 meters) away from hauled-out harbor seals during the pupping and rearing season (15 May - 1 July). Minimize disturbance of seals with pups in the water by remaining at least 330 feet (100 meters) away from parturient seals. (Note: These distances are derived from a study in a park where hunting is prohibited, access is restricted and where viewing seals is encouraged. These distances may be too liberal and may need to be enlarged in situations where access and hunting are not controlled and where seals would be expected to be more reactive to boat traffic.)
  - Minimize disturbance effects of boat traffic: for molting harbor seals, remain 0.5 miles (800 meters) away from haulouts where seals are molting; for Steller sea lions, remain at least 0.5 miles (800 meters) away from haulouts and rookeries; for sea otters, avoid known feeding and resting concentration areas, especially following prolonged stormy periods when sea otters have been unable to feed.
  - Individuals associated with Forest Service permitted or approved activities will not intentionally approach within 100 yards, or otherwise intentionally disturb or displace any hauled-out marine mammal.
3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of marine mammals by the public. Maintain a public education program explaining Forest management activities related to marine mammals in cooperation with state and other Federal agencies.

No direct effects on sea lions from Forest management activities are anticipated. Indirect effects may be associated with possible increased boating activity, but compliance with Forest service



and NMFS standards and guidelines should partially mitigate any adverse effects on sea lions resulting from proposed timber harvest alternatives. The Forest Service has no control over the routes taken by tugboats with log rafts, nor does the Forest Service control recreational boat activity.

Summary Analysis: Not Likely to Adversely Affect.

## Candidate Species Assessments

### Queen Charlotte Goshawk (*Accipiter gentilis laingi*)

#### Distribution and Population

The northern goshawk (*Accipiter gentilis atricapillus*) breeds from western and central Alaska and northern Yukon to Labrador and Newfoundland, south to southern Alaska, central California, southern New Mexico, western South Dakota, northern Minnesota, and northwestern Connecticut, and in the northern Appalachian Mountains (American Ornithologists' Union 1983). The Queen Charlotte goshawk (*A. g. laingi*) is one of three recognized subspecies of northern goshawk breeding in North America (Johnsgard 1990). Taverner (1940) first described the darker-plumaged Queen Charlotte goshawk as a distinct race, endemic to Southeast Alaska and coastal British Columbia. Webster (1988) found that the Queen Charlotte goshawk occurred from Vancouver Island north to the Taku River near Juneau. There is no evidence that the Queen Charlotte goshawk migrates outside Southeast Alaska and coastal British Columbia, and much evidence to indicate that it is a resident (Hayward et al. 1995).

The northern goshawk is identified as a Category 2 candidate species throughout its range. On May 9, 1994, the USFWS received a petition from the Southwest Center for Biological Diversity and numerous copetitioners, to list the Queen Charlotte goshawk as endangered pursuant to the Endangered Species Act of 1973, as amended. On August 19, 1994, the USFWS found that the information presented by the petitioners together with the information in USFWS files was substantial and indicated that listing may be warranted. Therefore, a status review of the species was initiated. The decision that listing was not warranted was reached on May 19, 1995. Therefore the status of the Queen Charlotte goshawk remains as a Category 2 candidate species.

The primary breeding habitats of the northern goshawk are dense, older-aged stands of deciduous, coniferous, or mixed forests. Key habitat features include the presence of large trees and relatively dense forest canopies (Crocker-Bedford 1992). Large trees provide important nesting and perching sites for goshawks, and relatively dense forest canopies provide favorable microhabitat for nesting. Small trees and shrubs may interfere with goshawk flight and prey capture. Dense canopies may reduce competition and predation by raptors typically associated with edge habitats or more open forest stands (Crocker-Bedford 1992). Important prey species may also be more abundant in old-growth forests (Hayward et al. 1995).

The Queen Charlotte goshawk is considered a rare breeder in Southeast Alaska with population estimates currently ranging from 100 to 381 pairs (USDA Forest Service 1991b; Crocker-Bedford 1994) to 100 to 800 pairs (Alaska Interagency Goshawk Committee, Report of June 30, 1994).

As of December, 1991, the Alaska Region Status Report for USDA Region 10 Sensitive Species Consideration, stated: "The two factors causing concern for the goshawk in Southeast Alaska are: low current population numbers and potential declines in habitat capability. Both factors expose the Queen Charlotte Goshawk to increased susceptibility to local or widespread extirpation. A review of goshawk observations during the past decade has revealed 16 confirmed or probable nesting sites in Southeast Alaska." A high association was found between

goshawk nesting stands and higher volume, tree-sized stands, 8 of the 16 sites were clearcut, or planned for timber harvest until the goshawk nests were found (USDA Forest Service 1991c). This relationship has also been established in other parts of the goshawk's range. Recent results of studies within the range of the Queen Charlotte goshawk (ADF&G 1993, Titus et al. 1994, Hayward et al. 1995), indicated a greater frequency of relocations of radio-tagged goshawks in mature and old-growth forest. A sampling of 32 goshawk nest areas, indicates that goshawks select upland forest cover and mature second growth with greater frequency than its availability would suggest (Hayward et al. 1995). Of 661 radio relocations, over 90% were in habitat classified as volume class 4 or greater and 68% were in habitats classified as volume class 5 or greater (Titus et al. 1994).

Goshawks in other areas occupy extensive home ranges (Johnsgard 1990) from 5,000 and 8,000 acres during the nesting season (Reynolds 1983). One adult female in a fragmented California forest had a summer home range of about 17,000 acres (Crocker-Bedford 1992). Titus et al. (1994) reported home ranges for 16 adult goshawks in Southeast Alaska as large as 19,613 hectares for the breeding period and year-round home ranges as large as 114,728 hectares. These home ranges may include a mosaic of habitat types, with a strong preference for mature forest with flight space beneath the canopy (Reynolds 1989, USDA Forest Service 1990). Home range size is strongly dependent upon quality of the foraging habitat and prey availability (Kenward 1982).

A recent review of the Queen Charlotte goshawk summarized habitat use as follows (Crocker-Bedford 1994):

"Analyses of habitat use have shown similar results throughout the geographical range of the northern goshawk in the United States. Home ranges include stands of large trees for nesting, as well as for greater abundance of some prey. The higher canopy provided by large trees, along with sparser than normal shrubs and small trees, appears to facilitate goshawk flight and prey capture. Closed canopies appear to provide preferred microclimate in the nesting stand, increased productivity of some important prey species, and reduced competition and predation by open-forest raptors. A literature review indicated that goshawk densities tend to decrease with amount of timber harvest, and that goshawks may sometimes be impacted by forest fragmentation. In Southeast Alaska 92 percent of the relocations on radio-tagged goshawks were in old-growth forests having over 8 MBF/ac. Old-growth having over 20 MBF/ac was most preferred." In addition, it appears that goshawk home ranges increase as harvest increases within their home range.

Goshawks generally select forest stands with large trees on gentle slopes at low elevations for nesting and foraging (Reynolds 1989, USDA Forest Service 1990). Foraging habitat is generally characterized by a greater diversity of forest age classes and structural characteristics (e.g., snags, woody debris) than nesting areas; foraging areas also comprise the largest percentage of goshawk home ranges (Reynolds et al. 1991). Goshawks feed primarily on ground-dwelling birds and small mammals.

Goshawk sensitivity to timber harvest has resulted in management recommendations to protect nest site integrity (USDA Forest Service 1990, USDA Forest Service 1991a, USDA Forest Service 1992, USDA Forest Service 1994a). Other management recommendations recognized the importance of the foraging area within the post-fledging area (Crocker-Bedford 1990, USDA Forest Service 1991b, and USDA Forest Service 1992). There is now widespread recognition of the importance of most foraging habitat, including areas far from the nesting site (Reynolds 1989, USDA Forest Service 1990, Crocker-Bedford 1990, Crocker-Bedford 1991, Crocker-Bedford 1992, USDA Forest Service 1992, Reynolds et al. 1992, Marshall 1992, USDA Forest Service 1994a). Key foraging habitat can be just as important, and perhaps even more limiting in Southeast Alaska, than nesting habitat (Crocker-Bedford 1994, Hayward et al. 1995).



Twenty-one goshawk nest areas were documented in Southeast Alaska with activity between 1990 and 1993 (Titus et al. 1994). At least one nest site was located at 18 of these areas, including 8 active nests in 1993. In 1994, a total of 33 historic and current sites with at least one nest were documented; active nests were located at 21 of these sites (ADF&G 1994). Although goshawk nesting has not been confirmed, use has been documented within the Lab Bay Project Area.

In southwestern Southeast Alaska, goshawk sightings have been reported at Maurelle Island, Heceta Island, Suemez Island, Camp Island, Coronation Island, Kupreanof Island, and Prince of Wales Island. Although several sightings of goshawks were documented in the Project Area on Prince of Wales Island in 1992, the size of the breeding population is unknown. These sightings may represent birds nesting outside the Project Area that utilize the area to fulfill a portion of their foraging needs, or may represent pairs nesting within the Project Area.

Six goshawk nests, Sarheen, Sarkar Lake, Logjam Creek, Rio Roberts, Sumez, and Heceta have been identified on or near Prince of Wales Island. The nest trees were in old-growth stands with relatively dense canopy (Hayward et al. 1995). The Rio Roberts nest site was located in 1995; of the remaining nest sites, none were active in 1995. Four radio-tagged adult birds associated with these areas have been found dead; one went "off the air" after being in the same location for several weeks (likely dead), and one was still alive on March 30, 1996 (pers. comm. C. Crocker-Bedford).

Field verification surveys of all potential Lab Bay harvest units were conducted in 1992 by Harza Northwest and subcontractor personnel. These efforts resulted in six possible observations of goshawks. Three of the sighting occurred in or near proposed harvest units (527-206, 531.1-221, and 536-211). The remaining three sightings occurred outside of proposed units - near Port Protection; two miles east of Red Lake; and northwest of Neck Lake. Goshawk surveys, utilizing the Alaska Region goshawk survey protocol, were conducted in the Lab Bay Project Area in 26 of the proposed harvest units in 1993 and in five proposed harvest units in 1994. In 1995, an additional 48 surveys were conducted to ensure that all locations of previous sightings and all proposed harvest units located within high probability habitat had been called for goshawks. No goshawks were detected during any of the surveys conducted on the Lab Bay Project Area.

### **Effects of Lab Bay Project on Population or Habitat**

No known goshawk nest sites have been found within the Project Area. Therefore, none of the alternatives propose timber harvest within known nest areas or designated post fledging areas. However, single goshawks were noted in six different locations in 1992 (see Distribution and Population), suggesting that nesting may have occurred or may occur in the future. Although standard inventory techniques were used to detect goshawks in the Project Area, nesting activity is sometimes overlooked even in stands that are sampled systematically (Kennedy and Stahlecker 1993). Moreover, only potential harvest units were sampled, and a large amount of suitable nesting habitat exists outside the harvest unit pool. Goshawk nesting and reproduction can be significantly impacted by timber harvest beyond the nest stand by adversely affecting foraging opportunities (Crocker-Bedford 1990, Patla 1991, Marshall 1992, Reynolds et al. 1992, Hayward et al. 1995).

The Forest Service developed a draft Forest Plan amendment for 'Maintaining Well-Distributed Viable Wildlife Populations within the Tongass National Forest' (USDA Forest Service 1994a). This plan included a Habitat Conservation Area (HCA) strategy consisting, of large and medium HCA's and a protection strategy for goshawk home ranges associated with all identified nests. Nests located prior to 1994 received habitat protection within their total home range, or within an 8.4 mile radius if sufficient radio-relocation information is not available to determine total home range. For goshawk nests documented in 1994 or later, draft interim guidelines for goshawk habitat management include a 30-acre nest area within which no vegetative manipulation would be allowed, and a 600-acre post-fledging area within which no commercial



timber harvest would be allowed. A 6,000-acre circular foraging area would also be designated, within which 20 percent or more of the area would be in timber stands meeting specific habitat criteria.

The total home range of the Sarkar Lake pair, located in 1992, extends into the southeast portion of the Lab Bay Project Area, encompassing VCU 540, and portions of 535, 538, 539, and 551 (Thorne Island) (Figure 1). Within the Sarkar Lake pair's total home range, Alternative 2 would harvest 29 units (1,103 acres); Alternative 3 would harvest 24 units (881); Alternative 4 would harvest 15 units (583 acres), plus 152 acres of uneven-aged harvest on Thorne Island; Alternative 5 would harvest 21 units (788 acres); and Alternative 6 would harvest 8 units (362 acres), plus 152 acres of uneven-aged harvest on Thorne Island. Alternatives 3, 4, and 6 are associated with Project-specific old growth retention strategies developed for the Lab Bay Project (see Lab Bay FEIS). Habitat of the Queen Charlotte goshawk, an old-growth dependent species, would be reduced under all of the action alternatives. Because of this, we conclude that the Lab Bay Project may adversely affect the Queen Charlotte goshawk. However, with the implementation of the old-growth conservation strategies incorporated into Alternatives 3, 4 and 6, adverse effects are expected to be much less. Alternatives 2 and 5 may significantly affect goshawks, due to the extent of harvest proposed in the remaining large, contiguous old-growth areas within the Project Area.

Any pairs of goshawks not discovered prior to timber harvest would be affected if the harvest unit corresponds to key stands of habitat. Studies of goshawk nest sites in Idaho indicated that timber harvesting, within 0.25 mile (0.4 km) of nest sites resulted in a 75 to 80 percent reduction in occupancy of their nesting territories (Patla 1990). Any goshawk nest found prior to harvest will be protected utilizing the goshawk management guidelines in effect at that time.

In the long-term, with implementation of Alternative P of the Supplement to the TLMP Draft Revision (USDA Forest Service 1991b), old-growth habitat in the Project Area would be reduced from 79,084 acres under existing conditions to 31,484 acres (by year 2054). Further, the three old-growth blocks with an interior patch size greater than 1,000 acres currently existing within the Project Area would be reduced in size, with one being eliminated. In this situation, a substantial reduction in goshawk habitat capability is predicted for the Lab Bay Project Area. The TLMP Revision Team is currently developing a new draft Forest Plan which may incorporate an old-growth retention strategy. For the Lab Bay Project, two strategies have been developed that will retain large blocks of old growth in addition to those designated in Alternative P of the TLMP Draft Revision -- one associated with Alternatives 3 and 6, and one associated with Alternatives 4 and 6 (see Final EIS). Under these retention strategies, long-term effects of timber harvest on the Queen Charlotte goshawk in the Project Area would be substantially less than Alternatives 2 and 5. The 1996 TLMP Draft Revision addresses the issues of old-growth habitat management on a Forest-wide basis. Once a Forest Plan Revision is adopted, it will provide specific direction for future old-growth management.

Summary Analysis: May Adversely Affect.

### **Marbled Murrelet (*Brachyramphus marmoratus*)**

#### **Distribution and Population**

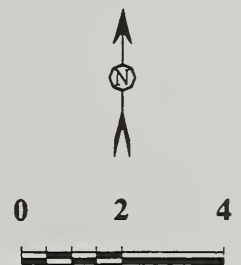
The marbled murrelet is a small seabird belonging to the family Alcidae. It occurs throughout the North Pacific. The North American subspecies (*B. m. marmoratus*) ranges from the Aleutian Archipelago in Alaska, eastward to Cook Inlet, Kodiak Island, Kenai Peninsula, and Prince William Sound, southward coastally throughout the Alexander Archipelago of Alaska and through British Columbia, Washington, Oregon to central California, with individuals wintering as far south as southern California (Marshall 1988, USDI Fish and Wildlife Service

**Figure 1**  
**Goshawk Home Ranges Within the Project Area\***



**Legend**

 Home Range of Sarkar Lake Goshawk Pair



**Units within Sarkar Lake Pair's Total Home Range, Alternative 2**

535-206	539-222	551-201	551-219
538-208	540-206	551-505	551-220
538-210	540-210	551-207	551-223
538-223	540-221	551-209	551-224
539-210	540-223	551-213	551-227
539-215	540-224	551-214	551-230
539-220	540-225	551-216	551-268
539-221			

\* Source: Based on 95% harmonic mean of the combined annual home ranges of the Sarkar Lake pair.



1992). It is primarily a near-shore feeder in shallow, ocean waters (Marshall 1988). Inland saltwater areas and occasionally inland freshwater lakes also are used (Carter and Sealy 1986, Marshall 1988). Food consists mainly of small fishes and invertebrates, primarily capelin (*Mallotus villosus*) and Pacific sand lance (*Ammodytes hexapterus*) (Sanger 1986, 1987; Sealy 1975).

In the southern part of its range, from southeastern Alaska south, the marbled murrelet has been found to nest almost exclusively in trees, making it unique among alcids. They are thought to be semi-colonial in their nesting, habitats, as nesting marbled murrelets are often aggregated (USDI Fish and Wildlife Service 1992). Through 1994, a minimum of 73 tree nests have been located in North America (26 in Oregon, 6 in Washington, 11 in California, 11 in British Columbia, and 19 in Alaska)(pers. comm., K. Nelson 1994). Of 47 nests found in Washington, Oregon, California, and British Columbia where data were available, all were located in old-growth trees that ranged in diameter-at-breast height (dbh) from 35 to 210 inches (88-533 cm). Nest trees in Alaska ranged in dbh from 12 to 41 inches (30-104 cm) (pers. comm., K. Nelson 1994). Nests are usually located high above the ground and have good overhead protection (USDI Fish and Wildlife Service 1992). Both male and female marbled murrelets incubate eggs: one bird stays at the nest for 24 hours, while the other feeds on the ocean. After hatching their young, the adults stay at the nest with the young bird for only about four days. The young bird is then left alone in the nest, except when the adults return to the nest to feed it (Interagency Meeting Records June 12, 1989). Nests have been observed in mature or old-growth forests in Douglas-fir (*Pseudotsuga menziesii*), Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), mountain hemlock (*T. mertensiana*), and redwood (*Sequoia sempervirens*) trees (Singer et al. 1991, 1992, Nelson and Hamer 1992). Fledglings have been found as far as 55 kilometers from salt water and it is likely that nesting occurs as far as 75 kilometers inland (Marshall 1988). Where trees are absent in the northern part of its range, the marbled murrelet nests on the ground or in rock cavities (Day et al. 1993, Marshall 1988).

Except for the fall period when they are molting, flightless, and stay on the ocean, birds have been known to fly to tree stands every month of the year. In Washington, birds have been recorded up to 50 miles inland (Hamer and Cummins 1991, in USDI Fish and Wildlife Service 1992).

**Overview of work in Alaska.** An upland study of marbled murrelets on Naked Island in Prince William Sound is ongoing. In the study area, murrelets flew most frequently into two areas with steep slopes facing, west, characterized by 70-80 percent cover of hemlock old growth. A review of the small 1991 sample suggested greater murrelet use of inland areas at the heads of bays as opposed to the outer peninsulas. Slopes facing northeast, west or southwest may be used more frequently than slopes facing north, northeast or southeast on Naked Island (Kuletz 1991).

Marbled murrelet nesting areas appear to be restricted to mature or old-growth forests. Actual nest sites are frequently on large, flat, often moss-covered limbs high above the ground. Typical use of moss for the nest substrate may be significant because lush moss does not appear on conifers of the northwest until the forest is 150 or more years of age (Marshall 1988). Open crown structure is a characteristic of Pacific Coast old-growth stands that is considered an important habitat factor because it allows birds easy access between the nest and the forest exterior (Marshall 1988); however, nest trees in Oregon were located in stands with both open and closed canopies (Nelson and Hamer 1992). Marbled murrelet nest trees in Prince William Sound, Alaska, have been found in forest stands with characteristic old-growth features: greater than 150 years old, large moss-covered platforms, and moderate to dense canopy closure (Kuletz et al. in prep).

In 1984 during a marbled murrelet research project conducted by the ADF&G, a tree nest was found on Baranof Island. This nest was on a large horizontal limb, 82 feet up in a mountain hemlock tree. In 1989, two more tree nests were found in California. Both nests were in large Douglas-fir trees, on large horizontal limbs, and were watched 24 hours a day. A newly hatched



bird at one of these nests was carried off by a raven (Interagency Meeting Records, June 12, 1989).

Although nest data indicate that murrelets in Southeast Alaska may use mature or old-growth forests exclusively (Nelson and Hamer 1992), use of second-growth forest is still being researched in Alaska. Inland surveys of mature, second-growth, and old-growth forests in California indicate that the vast majority of individuals are associated with old-growth forests during the breeding season (Ralph et al. 1990). Coastal surveys during the breeding season also indicate that most marbled murrelets occur offshore opposite old-growth or mature forest stands (Marshall 1988).

Three nest trees have been found in Southeast Alaska, one on Baranof Island and two on Prince of Wales Island. The nest on Baranof Island was on a large, flat limb about 25 meters up in a mountain hemlock (Quinlan and Hughes 1990). The nest tree was 1.2 kilometers inland at 366 meters elevation in an open, uneven-aged stand of mountain hemlock. The first nest on Prince of Wales Island was located in August 1992 on the east side of Twelve Mile Arm on a moss-covered limb about 24 meters up in an old-growth western hemlock. The nest tree was 350 meters from salt water at an elevation of about 300 meters in a stand of western hemlock, western red cedar, and Sitka spruce. The second nest was located, in July 1993, near Hatchery Creek in a western hemlock/western red cedar old-growth forest. The nest was on a western hemlock root, at ground level, near the edge of a 35-foot cliff (Brown and Ford 1995). Females with shelled eggs in their oviducts also have been taken on Prince of Wales Island in the past (Mendenhall 1992).

Marbled murrelets are common along the coast of the Project Area. Adult and subadult murrelets have been frequently observed foraging in inlets and coves of the Project Area. Boat transect surveys were conducted along the shoreline of logged and unlogged areas in Southeast Alaska by the Craig and Misty Fiords Ranger Districts in 1991; these surveys counted 7.5 to 10 marbled murrelets per kilometer traveled parallel to the shoreline in transects 200 meters wide. Assuming that marbled murrelets along the Lab Bay coast nest within the Lab Bay Project Area, and assuming a conservative estimate of 7 marbled murrelets per kilometer of shoreline, the Lab Bay Project Area (487 km of shoreline) might provide habitat for 3,400 marbled murrelets. This estimate may be low because the Craig and Misty survey figures were for 200-meter wide transects, not for all distances out from the shoreline. This estimate assumes that the figure from the Craig vicinity can be extrapolated to Lab Bay and that birds nest in the general vicinity of where they are seen at sea.

During Lab Bay field verification studies in 1992, interdisciplinary teams visited all potential harvest units. A marbled murrelet fledgling was observed on the ground in Unit 531.1223, approximately 1 mile south of Perue Lake, and a nestling marbled murrelet was found on the road at the east end of Neck Lake. During 1992 field verification studies on other projects, marbled murrelet eggshell fragments were observed on the west ridge of Twelvemile Arm, on the east ridge of Twelvemile Arm, and in the Old Franks drainage. In 1993, during field surveys on Control Lake Project Area, an eggshell fragment was found in a unit north of Big Salt Lake area, and a whole egg was found on the ground on the edge of a muskeg in the Logjam Creek drainage. From its condition it was believed to have been laid the previous summer.

In 1994 surveys were conducted to determine marine bird and sea otter abundance for Southeast Alaska. The study found that marbled murrelets were distributed fairly evenly throughout Southeast Alaska, with the highest densities occurring in the inside waters. Their population estimates of marbled murrelet abundance in Southeast Alaska was 434,000 ( $\pm 167,000$ ) birds. Surveys identified high densities of murrelets concentrated in the waters surrounding the Lab Bay Project Area (Alger et al. 1995).

In 1993, marbled murrelet surveys were conducted at dawn in 27 potential harvest units in the Control Lake Project Area, south of the Lab Bay Project Area. Murrelet activity was recorded

in 97 percent of the harvest units sampled and occupancy behavior was noted in 38 percent of them based on one survey (Control Lake DEIS). These studies and observations indicate that the marbled murrelet is relatively abundant on Prince of Wales Island and suggest that the estimate of 3,400 birds in the Lab Bay Project Area may be reasonable.

Old-growth removal is not the only factor which may influence marbled murrelet populations; other known factors include oil spills, predation, and commercial fishing (murrelets are caught in fishing nets). Piatt and Ford (1993) estimated that the marbled murrelet population on the Alexander Archipelago numbered about 96,200 birds based on surveys at sea during the 1970's and 1980's. They estimated the Alaskan breeding population at 153,030 birds. Mendenhall (1992) estimated that the marbled murrelet population for Southeast Alaska ranged from 75,000 to 150,000 during the summer, based on surveys by M. McAllister from 1981-1988. In 1994, the Southeast Alaska population was estimated to be 434,000 ( $\pm 167,000$ ) marbled murrelets.

### Effects of Lab Bay Proposed Action on Population or Habitat

One nesting location for marbled murrelets has been identified within the Project Area in potential harvest unit 531.1-223. This unit has been deferred from harvest under all of the alternatives due to concerns regarding timber proportionality in the Management Area. No other nest stands have been identified within the Project Area.

All alternatives will result in the harvest of old-growth stands which may be capable of providing nesting habitat for marbled murrelets. Table 3 shows the acreage and percent of old-growth habitat to be harvested by alternative. Alternatives 2, 3 and 5 would result in the greatest reduction of old-growth habitat. If it is assumed that nesting habitat is the main limiting factor for the population, then a reduction in old-growth forest may have a proportional effect on the number of nesting birds. This assumes uniform use of remaining old-growth habitat, and no influence resulting from fragmentation or increased edge.

Table 3  
Old Growth Acreage Harvested, by Alternative

Current (total)	Alternative (acres harvested)				
	2	3	4	5	6
79,084	4,550	3,040	2,919	3,106	1,885

Since all inland forest stands on the Tongass National Forest are less than 25 miles from salt water, all provide potential marbled murrelet nesting habitat (USDI Fish and Wildlife Service 1992). However, in California these birds more commonly occupy larger stands (greater than 500 acres) than smaller stands (less than 100 acres), and are usually absent from stands less than 60 acres in size (Paton and Ralph 1998, Ralph et al. 1990). Without precise knowledge to delineate the differences, all old-growth habitat greater than 8 MBF/acre is assumed to be suitable for nesting.

All action alternatives will harvest stands that may be capable of providing nesting habitat (old-growth forests) for marbled murrelets. Table 3 shows that each action alternative harvests 2 to 6 percent of the old-growth habitat in the Project Area, leaving at least 74,534 acres of old growth unharvested.

In areas with timber harvesting, the amount of nesting habitat for marbled murrelets will be reduced. The amount of old growth currently being used by marbled murrelets is unknown. The factors currently limiting marbled murrelets in Southeast Alaska have not been identified. Due to the number of unknowns associated with marbled murrelets, it is not known what the



actual effects of timber harvest will be, other than the total amount of habitat will be reduced. Fragmentation or increased edge effects may also reduce habitat suitability.

If the current population assumptions are correct, and if it is assumed that nesting habitat is the limiting factor for the population, then a reduction in nesting habitat may have a proportional effect on the population. If so, then even after a 2 to 6 percent reduction in potential nesting habitat (Table 3), the Lab Bay Project Area would still support 3,200 or more birds. This assumes no influence caused by fragmentation or increased edge, and a uniform use of the available, suitable habitat.

A measure of the effect of fragmentation on murrelet habitat can be obtained by calculating a patch size effectiveness (PSE) index for the Project Area based on a PSE curve developed specifically for the marbled murrelet at an interagency workshop (held at Juneau, Alaska, 1989). This curve assigns an effectiveness index value of 0 to old-growth patch sizes less than 70 acres in size and a value of 1.0 to patches greater than 600 acres in size. Intermediate values at curve inflection points include: 0.1 for patches of 100 acres, 0.5 for patches of 250 acres, and 0.9 for patches of 500 acres. Based on this curve and the frequency of patch sizes in the Project Area, the average PSE values shown in Table 4 were calculated.

Table 4  
**Average Patch Size Effectiveness (PSE) Indexes for the Marbled Murrelet in the Project Area by Alternative**

	Alternative						
	1954	1995	2	3	4	5	6
PSE Index for Marbled Murrelets	0.87	0.80	0.80	0.80	0.81	0.81	0.80

It can be seen that the PSE would change very little from the existing condition under any of the action alternatives.

However, over the long-term, if all suitable-available timber under Alternative P of the TLMP Draft Revision (1991) were to be harvested, the PSE would drop to 0.68, which is 15 percent less than existing conditions. Further, the amount of old-growth available would be reduced to approximately 31,484 acres, which is a 60 percent reduction from existing conditions. In this situation, a substantial reduction in marbled murrelet numbers is predicted for the Lab Bay Project Area. The TLMP Revision Team is currently developing a new draft Forest Plan which will incorporate an old-growth retention strategy. For the Lab Bay Project, two strategies have been developed that will retain large blocks of old growth in addition to those designated in Alternative P of the TLMP Draft Revision -- one associated with Alternatives 3 and 6, and one associated with Alternatives 4 and 6 (see Final EIS). Under these retention strategies, long-term effects of timber harvest on marbled murrelets in the Project Area would be substantially reduced. The 1996 TLMP Draft Revision addresses the issues of old-growth habitat management on a Forest-wide basis. Once a Forest Plan Revision is adopted, it will provide specific direction for future old-growth management.

In summary, the Lab Bay Project may affect many individual marbled murrelets. Over the long-term, a significant reduction of murrelet numbers is possible; although this reduction could be minimized with implementation of a long-term old-growth retention strategy. Many nest sites will be lost; however due to the large population size, viability will not be jeopardized. Therefore, although the project may affect many individual marbled murrelets, due to the large population size, there will be no effect on the persistence of murrelets within the Lab Bay Project Area.



Murrelet nests are exceedingly difficult to find, and no intensive nest searches in Lab Bay units are planned. However, if any nests are discovered, they will be protected by a 30-acre buffer to permit monitoring of reoccupancy and future study of habitat characteristics. If research, monitoring, or administrative studies uncover new information addressing murrelets in Southeast Alaska, they will be reviewed for use in and/or replacement of this guideline.

Summary Analysis: May Adversely Affect Individuals; No Effect to Population Viability.

### **Alexander Archipelago Wolf (*Canis lupus ligoni*)**

#### **Distribution and Population**

The Alexander Archipelago wolf is a small subspecies of the gray wolf (Goldman 1937, Pedersen 1982), similar in appearance to the Vancouver Island wolf (*C. l. crassodon*). Kirchhoff (1992) described the Alexander Archipelago wolf as occurring on the Southeast Alaska mainland and all large islands in Southeast Alaska except for Admiralty, Baranof, and Chichagof.

On December 17, 1993, the USDI Fish and Wildlife Service received a petition from the Biodiversity Legal Foundation to list the Alexander Archipelago wolf of Southeast Alaska as threatened pursuant to the Endangered Species Act of 1973, as amended. On May 13, 1994, the USFWS found that the petitioners had presented substantial information indicating that listing, may be warranted and a status review of the species was initiated. On February 15, 1995, the USFWS found that listing was not warranted at this time.

The primary food of most Southeast Alaskan wolves is deer (Wood 1990, Person 1993). Beaver, mountain goat, and moose are also primary or secondary prey in areas where available and spawning salmon are fed on when available (Wood 1990). Alexander Archipelago wolf abundance is likely linked to deer abundance and availability, particularly in southern island habitats (Suring 1993a, Wood 1990, Person 1993).

Based on field observations, discussions with trappers and anecdotal information, the wolf population in Southeast Alaska is estimated to be 635 to 690 individuals, distributed in 85 packs (Morgan 1990). However, Person (pers. comm. 1995) estimates that the current Southeast Alaska population is 1,000 individuals and that 30-40 percent of them occupy Prince of Wales Island. An active den was located on Thorne Island during 1992 field studies. Wolf pup tracks were identified in this area again in 1995, although the denning site was not located. Person (pers. comm. 1995) believes that the Lab Bay area may be a population sink for wolves on the island due to intensive trapping. Several radio-collared animals have relocated to the Project Area; all have been killed by trappers.

Many studies have shown that wolf abundance may be correlated with road density (Thiel 1985, Jensen et al. 1986, Mech et al. 1988, Fuller 1989). In one study, wolves generally were not present where the density of roads used by humans exceeded 0.93 miles/square mile (0.58 km/sq km) (Mech et al. 1988). However, other work has suggested that wolves could exist in areas with higher road densities if these areas were adjacent to roadless areas (Mech et al. 1988). The primary threat of high road densities is the increased access to humans who kill wolves by shooting, snaring, or trapping (Van Ballenberghe et al. 1975, Mech 1977).

Based on application of the Tongass Habitat Capability Model for the gray wolf (see Lab Bay FEIS), habitat capability declined by about 6% in the Project Area between prelogging and existing conditions. This estimated decline is directly related to a reduction in deer habitat capability associated with conversion of old-growth forest to second growth. Accompanying this decline in habitat capability has been an increase in road density associated with logging activities. Road density under existing conditions is approximately 1.15 miles/square mile across the Project Area. Increases in road density may result in a higher wolf harvest due to the

increased accessibility of the Project Area, despite less habitat capability to produce and support a population.

### **Effects of Lab Bay Proposed Action on Population or Habitat**

Implementation of one of the Lab Bay Project action alternatives would result in a reduction in deer habitat capability. Wolf habitat capability is predicted to be reduced in proportion to the reduction in deer habitat capability. The wolf habitat capability reduction is predicted to range from 1.3 percent for Alternatives 4, 5, and 6 to 2.6 percent for Alternative 2.

Road density would also increase in the Project Area as a result of implementation of any of the action alternatives. Total road density would range from 1.44 miles/square mile, after implementation of Alternative 2, to 1.26 miles/square mile, after implementation of Alternative 6. However, the effect of increased road density would be substantially mitigated by access management. Closure of all of the proposed roads with the exception of one road into Perue Lake area (Proposed for construction under all action alternatives) and one road into Protection Head (Proposed for construction under Alternatives 2, 4, and 5) (see Final EIS) will reduce the negative effects associated with new roads over the long-term. Access management on most roads constructed under the Lab Bay Project would be at the "eliminate level" (i.e., physically block the road). Thorne Island, under the alternatives which propose construction of roads (Alternatives 2, 3, and 5), would be managed at the "discourage level" (i.e., alder would be allowed to grow and blowdown would not be removed).

Because of the reduction in deer habitat capability and the increase in road density associated with implementation of any of the action alternatives, the Lab Bay Project may affect the Alexander Archipelago wolf. However, adverse effects would be less under Alternatives 6 and 4 which do not involve extensive roading into previously unroaded areas.

Under Alternative P of the TLMP Draft Revision (1991), long-term cumulative effects on the wolf in the Project Area would be substantial. With the assumption that all suitable-available timber would be harvested, wolf habitat capability would be expected to drop by 50 percent from 1954 conditions (see Final EIS). Corresponding increases in road construction would also occur and would result in increases in wolf harvest rate. For these reasons, the long-term viability of the wolf in the Project Area would be in question. The TLMP Revision Team is currently developing a new draft forest plan which will incorporate an old-growth retention strategy and road density standards. For the Lab Bay Project, two retention strategies have been identified -- one associated with Alternatives 3 and 6, and one associated with Alternatives 4 and 6 (see Final EIS). Under these retention strategies, long-term risk to viability of wolves in the Project Area would be substantially reduced relative to Alternatives 2 and 5. The 1996 TLMP Draft Revision addresses the issues of old-growth habitat management on a Forest-wide basis. Once a Forest Plan Revision is adopted, it will provide specific direction for future old-growth management.

Summary Analysis: May Adversely Affect.

### **Arctic Peregrine Falcon (*Falco peregrinus tundrius*)**

#### **Distribution and Population**

The Arctic peregrine falcon breeds across the entire Greenland-Canadian-Alaskan Arctic from tree-line north to about latitude 70°N. It is highly migratory, and winters as far south as southern Brazil. Population numbers have increased three-fold in Alaska (ADF&G letter Feb. 6, 1987; Ambrose et al. 1988; minutes of Interagency Wildlife Technical Committee Meeting of March 29, 1991). The Arctic peregrine falcon was removed from the threatened species list on October 5, 1994. The Endangered Species Act requires that a species be monitored for five years following delisting. If evidence acquired during this monitoring period indicates that threatened or endangered status should be reinstated, the USFWS may use the emergency listing



authority of the Endangered Species Act. At the end of this five year monitoring period the USFWS will decide to either relist, continue monitoring, or end the monitoring. The Arctic peregrine falcon currently has the status of a Category 2 candidate species.

### **Effects of Lab Bay Proposed Action on Population or Habitat**

As described for the American peregrine falcon (see above), the Lab Bay action alternatives are not likely to adversely affect arctic peregrine falcons.

Summary Analysis: Not Likely to Adversely Affect.

### **Harlequin Duck (*Histrionicus histrionicus*)**

#### **Distribution and Population**

The harlequin duck's range is divided into two separate and distinct regions: eastern and western. The eastern range embraces Iceland, parts of Greenland, and Labrador, with the winter range extending as far south as New Jersey. The western range includes northeast Siberia west to the Lena River, east to the Kamchatka Peninsula and the Commander Islands and north to the Arctic Circle, then across the Bering Sea to the Aleutian Islands, much of interior Alaska, and south to northwest Wyoming and central California (Bellrose 1980). Armstrong (1980) describes harlequin ducks as common during all seasons in Southeast Alaska.

Alaska supports a majority of the world population of harlequin ducks (Bellrose 1980) with large concentrations occurring in Southeast Alaska, Prince William Sound and the north Gulf Coast, and (especially during winter) the Aleutian Islands (Gabrielson and Lincoln 1959, Isleib and Kessel 1973). In Prince William Sound, the U.S. Fish and Wildlife Service estimated over 10,000 harlequin ducks during October 1971 (Isleib and Kessel 1973).

Harlequins feed on fish roe, marine plants, and a variety of marine invertebrates. In early spring, the harlequin duck can be locally abundant in areas where Pacific herring spawn (Campbell et al. 1990).

Breeding areas of the harlequin duck include coastal and interior rivers, often turbulent glacial streams, coastal and interior lakes and ponds, and coastal islands and rocky shores. In northeast Prince William Sound, birds were most numerous near coastal breeding streams in mid- to late-May (Dzinbal 1982). Nests along streams are usually within 6 feet (but, up to 60 feet) of water (DeGraaf et al. 1991). The nest site generally has shelter overhead: a recess in a stream bank or among rocks, or under shrubs, trees, or stranded debris. Occasionally the nest is in an open area or even on a stream bar, but under shrubbery or other low vegetation. Nests may be located from near sea level to 2,100 meters elevation (Campbell et al. 1990). Of 17 breeding records in British Columbia, 12 were from elevations in excess of 1,000 meters (Campbell et al. 1990). In Iceland, Bengston (1972) noted a strong tendency for individuals to return to the same nest site each year.

During the winter the harlequin duck is common to abundant in the coastal waters of Southeast Alaska, Prince William Sound, Cook Inlet, the bays of the Alaska Peninsula, the Aleutians and the Pribilofs (Gabrielson and Lincoln 1959). The northern Queen Charlotte Islands are a major wintering area in British Columbia (Campbell et al. 1990). Preferred winter habitat is in near-shore coastal waters adjacent to rocky shores and bays, where they often feed in kelp beds (Campbell et al. 1990).

There is no information available on the breeding biology of the harlequin duck in the Project Area. In Alaska, harlequins breed primarily along the coast from Southeast Alaska to the Alaska Peninsula (Johnsgard 1975). Coastal streams in this area may contribute substantially to the annual global production of harlequins (Dzinbal 1982). In northeast Prince William Sound,



8-11 breeding harlequins (1.3-1.8 breeders per km) were associated with two short coastal streams (Dzinbal 1982).

### **Effects of Lab Bay Project on Population or Habitat**

Nesting habitat for the harlequin duck occurs along inland rivers and streams. Riparian habitats along all rivers and streams on the Project will be managed according to the Stream and Lake Protection management prescription (USDA Forest Service 1991b) or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The TLMP Draft Revision (USDA Forest Service 1991b) standards and guidelines were incorporated into the Lab Bay Project. The protection provided by the Stream and Lake Protection LUD, as well as the Beach Fringe and Estuary LUD, is anticipated to ensure future use of nesting and wintering habitats by harlequin ducks. Although the Lab Bay Project may affect one or two nesting sites through developments such as bridges and road crossings, it would have no effect on the viability or persistence of harlequin ducks within the assessment area.

Summary Analysis: May Adversely Affect Individuals; No Effect on Population Viability.

### **Olive-sided Flycatcher (*Contopus borealis*)**

#### **Distribution and Population**

The olive-sided flycatcher breeds in wooded regions from central Alaska east to Newfoundland and south to northern Baja California and central Arizona in the West, central Minnesota and northern Michigan in the Central States, and North Carolina and Tennessee in the East. The species winters in South America. Armstrong (1980) describes it as an uncommon breeder in Southeast Alaska.

It inhabits open coniferous forests and forest edges along lakes, streams, and muskegs (Bent 1942). Godfrey (1979) described the habitat of the species as "burntlands with standing dead trees, bogs, lakeshores with water-killed trees, lumbered areas, and other clearings in the woodland; sometimes tall trees about farmland, occasionally orchards." DellaSala et al. (1994) noted that the species was often observed using habitats associated with lakes and muskegs during a breeding bird study on central Prince of Wales Island. During field surveys in the Lab Bay Project Area, the olive-sided flycatcher was observed in areas of past harvest.

### **Effects of Lab Bay Proposed Action on Population or Habitat**

Riparian habitats along all rivers and streams on the Project will be managed according to the Stream and Lake Protection management prescription (TLMP Draft Revision 1991) or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The TLMP Draft Revision (1991) standards and guidelines were incorporated into the Lab Bay Project.

Upland habitat value for the olive-sided flycatcher may improve due to logging, particularly with the type of harvest proposed under the Lab Bay Project. Olive-sided flycatchers have been observed utilizing edge habitat near lakes and muskegs (DellaSala et al. 1994) and utilizing recent clearcuts (Confer, unpubl. data). Habitat adjacent to lakes and streams would be protected under the Stream and Lake Protection management prescription. In addition, the partial cutting and clearcut types prescribed under the Lab Bay project, which incorporate varying degrees of reserve trees and snags, would be expected to produce habitat similar to that in which past sightings have occurred. Therefore, the Project may affect olive-sided flycatcher habitat, though the effect is likely to be positive.

Summary Analysis: No Adverse Effect.

## **Spotted Frog (*Rana pretiosa*)**

### **Distribution and Population**

In Southeast Alaska, the spotted frog is found from the Taku River south to Unuk and Salmon River (Hyder) Systems (USFWS unpubl. data). Specimens have been collected at Twin Lakes along the Stikine River (Hodge 1976). Although its status in the study area is unknown, literature indicates that it may occur on or near Prince of Wales Island (Hodge 1976). The spotted frog frequents the grassy margins of streams, rivers, and lakes. It is extremely aquatic, and is rarely found far from permanent water. In Yellowstone National Park, spotted frogs eat a broad range of insects in addition to a few kinds of mollusks, crustaceans, and arachnids (Nussbaum et al. 1983).

A search for spotted frogs was made by interdisciplinary teams that conducted field reconnaissance of all potential Lab Bay harvest units. These teams included wildlife and fish biologists, botanists, foresters, and other specialists. There were no sightings of spotted frogs.

### **Effects on Population or Habitat**

Riparian habitats along all rivers and streams on the Project will be managed according to the Stream and Lake Protection management prescription (TLMP Draft Revision 1991) or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The TLMP Draft Revision (1991) standards and guidelines were incorporated into the Lab Bay Project. With the implementation of Stream and Lake Management Prescriptions, no effect on spotted frogs is anticipated with any alternatives of the Lab Bay Project, whether or not the species occurs within the Project Area.

Summary Analysis: No Adverse Effect.

## ***Carex lenticularis* var. *dolia***

The range of the goose-grass sedge, *Carex lenticularis* var. *dolia*, includes the coastal mountains of Alaska and British Columbia. In Southcentral and Southeast Alaska and the Aleutian Islands, occurrences are documented from wet meadows, stream margins, and the edges of snowbeds. Elevations of sightings have ranged from 50 feet to over 3,500 feet (USDA Forest Service 1994). This sedge occurs in Southeast Alaska and therefore may occur in the Project Area.

*Carex lenticularis* var. *dolia* was not observed during field surveys. While it may occur in the Project Area, it is not likely that it would be affected directly by timber harvest, because it has not been found in forested habitats. The species could be affected indirectly by changes in hydrology that affect wetland size or function.

Summary Analysis: Not Likely to Adversely Affect.

## **Sensitive Species Assessments**

### **Peale's Peregrine Falcon (*Falco peregrinus pealei*)**

The Peale's peregrine falcon is essentially a resident on the islands and headlands of the Pacific Coast from Oregon northwest through the Aleutian Islands to the Commander and Kurile Islands of Asia. It is a marine peregrine and seldom occurs inland. This subspecies is not listed as endangered or threatened, but is covered by a provision of the "similarity of appearance" which broadens the scope of protection due to the status of the American peregrine falcon. It is also listed by the Forest Service as a Sensitive Species.



The Peale's peregrine falcon is the only subspecies known to occur regularly in Southeast Alaska; it nests on the outer islands west of the Project Area (Schempf 1982) and could exist on the cliffy coastline on the west side of the Project Area. The other two subspecies are believed to migrate through the region. The population of Peale's peregrine falcon in Southeast Alaska was estimated at about 25-30 pairs (Johnsgard 1990). On the nearby Queen Charlotte Islands in British Columbia, a minimum of 50-75 pairs breed (Campbell et al. 1990). In summer 1992, a single peregrine falcon was observed in the Project Area on Prince of Wales Island. In the past, peregrines have also been observed at several nearby islands including Dall, Baker, Suemez, Noyes, Heceta, Warren, and Coronation (Alaska Natural Heritage Program 1992).

#### **Effects of Lab Bay Proposed Action on Population or Habitat**

Harvest units 527-227, -228, and -229 are located on Protection Head near the coastal cliffs, and are proposed for harvest under Alternatives 2, 4 and 5. Alternatives 3 and 6 do not propose to harvest these three units. Therefore, for Alternatives 2, 4, and 5, the Peale's Peregrine Falcon may be adversely affected; however, this species is not likely to be adversely affected under Alternatives 3 and 6.

Summary Analysis: May be Adversely Affected under Alternatives 2, 4, and 5; Not Likely to Adversely Affect under Alternatives 3 and 6.

#### **Osprey (*Pandion haliaetus*)**

##### **Distribution and Population**

The osprey occurs in tropical and temperate parts of all continents. In the Western Hemisphere, it breeds from northwestern Alaska and central Canada south to the Bahamas and Mexico. Ospreys winter from the southern United States south to Chile and Argentina. Osprey occur in low numbers in Southeast Alaska during the spring/summer nesting period.

Osprey feed almost exclusively on fish (Johnsgard 1990). Frogs, crustaceans, turtles, small mammals, and birds are occasionally taken, but are never an important source of food.

The basic habitat needs of ospreys during the breeding season are 1) an adequate source of fish that can be captured near the water surface, and 2) and elevated nest site within a few kilometers of the food supply (Johnsgard 1990). In British Columbia, the osprey breeds from near sea level to at least 1070 meters elevation, usually in close proximity to water (Campbell et al. 1990). Nests may be located in the vicinity of lakes, rivers or marine shores. Nest sites preferably are dead or open-topped live trees, but in some locations rock outcrops, cliffs, and artificial structures such as utility poles are used (Johnsgard 1990).

Historically, the Southeast Alaska population of osprey appears to have remained stable but low. It is unknown why osprey occur in relatively low numbers in this region, but available nest sites and foraging areas do not appear to be limiting factors. Eight osprey nests have been located in Southeast Alaska, primarily on islands near the mouth of the Stikine River (Alaska Natural Heritage Program 1992). Currently there are no nest records for Prince of Wales Island or from the nearby Queen Charlotte Islands in British Columbia.

#### **Effects on Population or Habitat**

The Lab Bay Project is not expected to affect nesting osprey, as no known sites occur in the Project Area, nor even on Prince of Wales Island, and availability of nesting and foraging areas does not appear to be a factor limiting population growth. In addition, minimal or no effects on preferred osprey habitat are expected from project activities because of the protection of habitat surrounding the beaches, estuaries, and major streams in the Project Area. If a nest is discovered in the Project Area, standards and guidelines outlined in the TLMP Draft Revision (USDA Forest Service 1991b) will be followed.

Summary Analysis: No Adverse Effect.



## **Trumpeter Swan (*Cygnus buccinator*)**

### **Distribution and Population**

In Southeast Alaska, trumpeter swan nesting is restricted to the Chilkat River Valley. In 1990, 34 pairs and 50 cygnets were observed there during aerial surveys there (Groves et al. 1992). Breeding habitat includes wetland areas with reeds, sedges or similar emergent vegetation, primarily on freshwater but occasionally in brackish conditions. In Alaska, horsetails and sedges are frequently used for nests (Bellrose 1980). The nests are placed in water 1 to 3 feet deep, and the same nest site is often used for several years (Bellrose 1980). Swans winter on open ponds, lakes, and sheltered bays.

There are no records of trumpeter swans nesting in the Project Area; however, swans are known to winter on interior freshwater lakes on Prince of Wales Island. Wintering trumpeter swans were observed at Calder Bay, Salmon Bay Lake, Exchange Cove, Sinkhole Lake, and Alder Creek during surveys conducted between 1989 and 1993 (USDA Forest Service, Unpublished Data). Numbers of birds using interior and coastal locations during migration is unknown.

### **Effects of Lab Bay Project on Population or Habitat**

During winter, trumpeter swans appear to prefer shoreline areas of ice-free waters, therefore, the Lab Bay Project is not expected to impact the habitat of this species since project activities will occur primarily in forested habitats. The protection provided by the Beach Fringe and Estuary LUD, as well as the Stream and Lake Protection LUD, would maintain trumpeter swan habitats. In addition, timing restrictions will be implemented within 1/2 mile of waterbodies known to be used during some winters (USDA Forest Service 1991b). Within 1/2 miles of such locales, noisy activities (blasting, log hauling, timber harvesting) may not occur November through March. Given the standards to reduce effects of disturbance, no effect on swans is expected from the Lab Bay Project.

Summary Analysis: No Adverse Effect.

## ***Glyceria leptostachya***

The mannagrass *Glyceria leptostachya* has been observed in wet lowlands in central and southern Southeast Alaska, and may range as far south as central California. It is found in wet lowland habitats, including swamps and stream and lake margins. One of the two documented occurrences in Alaska is from Prince of Wales Island in the Control Lake vicinity, where plants were noted growing along a stream in forested habitat. The species is described as "easily overlooked and likely to be more widespread in Southeast" than indicated by the small number of documented observations (USDA Forest Service 1994b).

No observations of *Glyceria leptostachya* were made during field surveys and no sightings have been documented in the Project Area. If the species does exist in the Project Area, no direct effects from timber harvest are anticipated because stream and lakeshore buffers should provide adequate protection for this plant. Individual species or populations could be indirectly affected by changes in hydrology resulting from timber harvest or road construction under any action alternative; however, this is unlikely.

Summary Analysis: Not Likely to Adversely Affect.

## ***Platanthera chorisiana***

*Platanthera chorisiana*, a small orchid, is found in wet habitats in montane forests, dry to moist meadows, and subalpine and alpine areas. In North America, its range is thought to extend from the Aleutian Islands and Juneau in Alaska south to Washington. Ten new populations were found on the Ketchikan Area during field surveys conducted by the USFS in 1995 (USDA

Forest Service 1995c). Plants were found as scattered individuals, and may often be overlooked, especially when flowers are absent. *Platanthera chorisiana* was observed in a wide variety of habitats, including small (0.1-acre) forest/muskeg openings, forest/muskeg edge habitat, extensive wetland/beaver complexes, upper lakeshore meadows, and riparian seeps and springs. Associated vegetation was typically low-growing wetland species, and canopy closure was 10 percent or less at sites where the species was observed. *Platanthera chorisiana* was not found in dense sedge meadows, where it may be crowded out.

*Platanthera chorisiana* was not observed during field surveys and no sightings have been documented in the Project Area. However, undetected specimens potentially could be affected by timber harvest and road construction within open lowland woods or open-forested meadows. It was the most common of the sensitive plants found by botanists in the Ketchikan Area in 1995.

Summary Analysis: Not Likely to Adversely Affect.

### ***Romanzoffia unalaschensis***

Seeps, springs, moist to wet river banks and terraces and streamsides provide habitat for *Romanzoffia unalaschensis*. It has also been documented from moist cliffs, talus and rocky slopes. The species has been described as endemic to the eastern Aleutians, the Alaska Peninsula, Kodiak, and east to Sitka. The plant appears similar to some saxifrage species, and distribution may therefore be wider than currently known (USDA Forest Service 1994).

*Romanzoffia unalaschensis* is known to occur on the Thorne Bay Ranger District, but was not observed during Lab Bay field surveys. If it is present in the Project Area, no direct effects would be expected as a result of timber harvest under any alternative, since no harvest is proposed within its required habitat. However, if present, this species could be affected by activities associated with road construction, i.e., selection of sites for rockpits and quarries.

Summary Analysis: Not Likely to Adversely Affect.

### ***Senecio moresbiensis***

The range of the butterweed *Senecio moresbiensis* is described as restricted to the Queen Charlotte Islands, with disjunct populations in Southeast Alaska and Vancouver Island. One of the five documented Alaska occurrences of *Senecio moresbiensis* is from Prince of Wales Island. Its habitat is described as moist montane to alpine areas, from shady to open sites. Three of the five occurrences in Southeast Alaska are described as growing on exposed limestone rock fragments in alpine meadow; on alpine limestone rock runnel in karst landscape; or in thin soil on limestone bedrock in a karst landscape (USDA Forest Service 1994).

*Senecio moresbiensis* is known to occur on Prince of Wales Island, and although there were no observations during Lab Bay field surveys and no documented sightings, it may occur in the Project Area. If present in the Project Area, the species could be affected by timber harvest and road construction in forest edge situations, especially where soils are thin over limestone bedrock. Alternatives 3 and 6, which do not propose harvest on high vulnerability karst, would be least likely to affect potential habitat for *Senecio moresbiensis*.

Summary Analysis: Not Likely to Adversely Affect.

### ***Hymenophyllum wrightii***

The global range of this fern species includes coastal Southeast Alaska and British Columbia, northern Japan and Korea, and the Soviet Far East. In Southeast Alaska, the plant is known



only from Biorka and Mitkof Islands. It has been observed growing at the base of trees and in the crevices of rock outcrops in damp, humid forests. Hulten (1968) describes the plant as "certainly much overlooked", and it may be more common than it is currently considered to be.

No observations of *Hymenophyllum wrightii* were made during field surveys and no sightings have been documented in the Project Area. However, since several of the documented occurrences of the plant are from the Tongass National Forest, and similar habitats are planned for harvest in the Project Area, it is possible that undetected specimens potentially could be affected by timber harvest and associated activities.

Summary Analysis: May Adversely Affect.

### ***Isoetes truncata***

*Isoetes truncata* is documented from Southcentral Alaska and Vancouver Island, but only a few widely-isolated populations are known to exist. It is a rooted aquatic plant, found in shallow lakes and streams. *Isoetes* may also be easily overlooked, and its abundance in the state is unknown (USDA Forest Service 1994). It is unknown whether this species occurs in the Project Area.

*Isoetes truncata* was not observed during field surveys and has not been documented in the Project Area. Since this is an aquatic plant, it is not anticipated that it would be directly affected by timber harvest or road construction even if it does occur in the Project Area. Indirect effects may occur as a result of changes in hydrology. However, stream and lakeshore buffers should provide adequate protection for this plant.

Summary Analysis: No Adverse Effect.

### ***Ligusticum calderi***

The range of *Ligusticum calderi* in Alaska is thought to be limited to Pleistocene refugia of Southcentral and Southeast Alaska, with documented occurrences in British Columbia and on Prince of Wales Island, also. All state occurrences are described from alpine habitats and margins of subalpine mixed coniferous forest (USDA Forest Service 1994b).

*Ligusticum calderi* may occur in alpine and subalpine portions of the Project Area, although no observations were made during field surveys and no sightings have been documented. No harvest units are proposed in subalpine habitats under any alternative, and no effects would be expected to occur.

Summary Analysis: No Adverse Effect.

### ***Platanthera gracilis***

This bog orchid is found in wet, open habitats. Its geographic range is small, centered in northern British Columbia and southernmost Southeast Alaska on Prince of Wales Island. Only four occurrences are known. However, due to its similarity to *P. saccata*, it is not clear whether *P. gracilis* is a truly distinct taxon; if so, it may be more common than previously believed (USDA Forest Service 1994b).

*Platanthera gracilis* may occur in the Project Area, although it was not observed during field surveys and no sightings have been documented. Undetected specimens potentially could be affected by removal of timber from Lab Bay harvest units and road construction in open lowland woods and open-forested meadows. Changes in hydrology resulting from timber harvest or road construction are unlikely to cause noticeable effects on the species.

Summary Analysis: Not Likely to Adversely Affect.



### ***Poa laxiflora***

The range of the bluegrass *Poa laxiflora* is described as extending from Southeast Alaska southward to Oregon, with scattered distribution. Seven sightings have been documented in Southeast Alaska near Hoonah, Sandborn Canal at Port Houghton, and Admiralty Island (USDA Forest Service 1994b). Habitat is described as moist, open lowland woods, but 4 of the 5 occurrences listed in the ANHP database are from sites near salt water, i.e., upper beach meadow, brackish meadow along tidally-influenced stream, and beach/forest ecotone.

No sightings of *Poa laxiflora* have been reported in the Project Area, and none were documented during field surveys. If the species does occur in the Project Area, it could be affected by timber harvest and road construction in moist open lowland woods and open-forested meadows.

Summary Analysis: May Adversely Affect.

### ***Ranunculus orthorhynchus* var. *alaschensis***

The buttercup *Ranunculus orthorhynchus* var. *alaschensis* is known from southern Southeast Alaska, adjacent British Columbia and Vancouver Island, and has been documented near Craig, on Prince of Wales Island. Its habitat is described as moist lowland meadows and open areas (USDA Forest Service 1994).

*Ranunculus orthorhynchus* var. *alaschensis* was not observed during field surveys and no sightings have been documented in the Project Area. However, as this species is known to occur south of the Project Area near Craig, it may also occur in the Project Area. Timber harvest avoids the types of habitat preferred by *Ranunculus orthorhynchus* var. *alaschensis*, but road construction occurring in open, moist areas could affect this species if it is present in the Project Area.

Summary Analysis: Not Likely to Adversely Affect.

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## Documentation of Correspondence with Other Agencies

March 5, 1992 Letter from USFWS concerning T & E species in the Lab Bay, CPOW, Polk Inlet, and Revilla timber sale areas.

April 17, 1992 Letter from USFWS augmenting March 5, 1992 letter to include request that the spotted frog, a Category 2 candidate species be given consideration within the Lab Bay, CPOW, Polk Inlet, and Revilla timber sale areas.

January 26, 1994 Letter from NMFS concerning T & E species in the Control Lake timber sale area.

May 18, 1995 Letter to USFWS requesting updated list of T & E and proposed species for the Lab Bay Project Area.

June 2, 1995 Letter to USFWS requesting updated list of T & E and proposed species for the Lab Bay Project Area.

June 6, 1995 Letter from USFWS updating the list of T & E species that may occur in the Lab Bay Project Area.

June 28, 1995 Letter from NMFS updating the list of T & E species that may occur in or adjacent to the Lab Bay Project Area.

# **Appendix O**

## **Public Comment on Draft EIS and Forest Service Response**



# О. В. Давыдов

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Appendix O includes the written comments received on the Draft EIS and testimony received at ANILCA 810 Subsistence hearings and other public hearings. Forest Service responses to substantive comments is also provided.

Availability of the Draft EIS was announced in the Federal Register on August 4, 1995 with the deadline for public comment listed as September 18, 1995. The comment period was subsequently extended to September 30, 1995 to allow for additional public input. Copies of the Draft EIS were mailed to all individuals and organizations on the Mailing List. Notices of the availability of the Draft EIS and announcing the schedule for subsistence hearings and public open houses were placed in the *Ketchikan Daily News* and the *Island News*. Additional notices to radio stations and newspapers in the region were issued.

ANILCA subsistence hearings and open houses were held on the dates and in the communities listed below. Open houses were held in conjunction with the subsistence hearings to describe the analysis process and answer public questions on the Draft EIS. Public comment on the Draft EIS was also accepted at that time.

<u>Community</u>	<u>Date</u>	<u>Meeting Type</u>
Port Protection/Point Baker	August 17, 1995	Open House
Whale Pass	August 17, 1995	ANILCA Hearing
Thorne Bay	August 18, 1995	Open House
Klawock	August 19, 1995	ANILCA Hearing
Craig	August 19, 1995	ANILCA Hearing
Coffman Cove	August 21, 1995	ANILCA Hearing
Wrangell	August 22, 1995	ANILCA Hearing
Ketchikan	August 23, 1995	Open House
Port Protection/Point Baker	September 22, 1995	ANILCA Hearing

Approximately 42 individuals, organizations, and agencies submitted written comments on the Draft EIS. In addition, public comments made during ANILCA hearings and open houses were incorporated into the Final EIS. Responses to comments are presented herein. The Final EIS has been filed with the Environmental Protection Agency and is available to the public.

This section provides copies of the comment letters organized into two categories: agency/organization and individual. Comment letters are presented alphabetically by agency/organization title or surname within the two categories. Each comment letter has been coded (e.g. DOI for U.S. Department of Interior), and substantive comments within each letter have been numbered. Forest Service responses to comments are numbered correspondingly and are printed facing the comment letters.

Transcripts of the formal public hearings are presented immediately following the comment letters and are arranged by hearing date. Hearing comments are coded by location and individual.

Following is a list of comment letters, hearings, codes, and beginning page number references.

<u>Letter</u>	<u>Code</u>	<u>Beginning Page No.</u>
State of Alaska	AK	4
U.S. Department of Interior	DOI	31
Environmental Protection Agency	EPA	50
Glacier Grotto	GLG	60
Southeast Alaska Conservation Council	SEACC	61
Sumner Strait Advisory Committee	SSAC	77

<u>Letter</u>	<u>Code</u>	<u>Beginning Page No.</u>
Tongass Cave Project	TCP	78
Tongass Conservation Society	TCS	83
Ketchikan Pulp Company	KPC	88
William Baumgartner	WB	91
Jo Chatham et al.	JC	98
Michael Compton	MC	104
Leslie Fahey	LF	105
William Fannemel	WF	109
Gretchen Goldstein	GG	114
Ralph and Joy Gregory	RG	117
Karen Howell	KH	118
Lance Howell	LH	121
Elzie Isley	EI	124
David Klinger	DK	125
Joan Kautzer	JK	126
Rebecca Knight	RK	131
Connie LaPerriere	CL	133
David Love	DL	134
Marcel LaPerriere	ML	136
Lucille Merrill	LM	137
Richard Myren	RM	138
Alan Stein	AS	145
Joseph Sebastian	JS	149
Pete Smith and Valery White	PS	152
William Shoaf	WRS	154
Whale Pass ANILCA Hearing		161
William Fannemel	WFW	163
Marcel LaPerriere	MLW	170
Thorne Bay Public Hearing		181
Klawock ANILCA Hearing		182
Craig ANILCA Hearing		183
Coffman Cove ANILCA Hearing		184
Wrangell ANILCA Hearing		186
Scott Brock	SBW	186



<u>Letter</u>	<u>Code</u>	<u>Beginning Page No.</u>
Ketchikan Public Hearing		187
Connie LaPerriere	CLK	187
Kent Nicholson	KNK	188
James Llanos	JLK	188
Hank Newhouse	HNK	189
Port Protection ANILCA Hearing		190
Don Hernandez	DHP	191
Gretchen Goldstein	GGP	195
Lance Howell	LHP	196
Ernest Watson	EWP	197
Dessa Baker	DBP	198

# STATE OF ALASKA

## OFFICE OF THE GOVERNOR

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September 28, 1995

Mr. Dave Arrasmith  
USFS, Ketchikan Area  
Federal Building  
Ketchikan, AK 99901

Dear Mr. Arrasmith:

SUBJECT: LAB BAY TIMBER SALE DEIS  
STATE I.D. NO. AK9508-04

The Division of Governmental Coordination has completed coordinating the State of Alaska's review of the Draft Environmental Impact Statement (DEIS) for the lab bay timber sale per the National Environmental Policy Act (NEPA). We appreciate the opportunity to participate at this stage of planning, and offer a response on behalf of the State resource agencies. As this review was conducted to satisfy the requirements of NEPA, the State comments include a broad range of issues.

Ultimately, per 15 CFR 930, Subpart C, the preferred alternative for the proposed activity is required to be consistent to the maximum extent practicable with the standards of the Alaska Coastal Management Program (ACMP). At this time, the State is providing preliminary ACMP comments for your information and consideration.

The project proposed in the DEIS is to harvest approximately 85 million board feet (MMBF) of timber in the lab bay project area in order to supply timber for the Ketchikan Pulp Company Long-term contract. Alternative 3 has been selected as the preferred alternative. In Alternative 3, the FS proposes to harvest approximately 66 million board feet (mmbf) from an estimated 3050 acres from 83 harvest units within a 174,357 acre project area. Approximately 55 miles of new roads would be constructed. One new Log Transfer facility would be constructed in association with the harvest of Thorne Island and existing LTF's would be used at Calder Bay, Lab Bay, and Whale Passage. Please note that individual ACMP reviews may be necessary for these facilities.

AK-1

## Responses to State of Alaska

AK-1

Your comment supporting the preferred alternative for the Draft EIS, Alternative 3, is noted. The Lab Bay, Calder Bay, and Whale Pass LTF's are currently permitted facilities and do not require ACMP consistency review. The LTF on Thorne Island is not proposed for construction or use under Alternatives 4 or 6 in the Final EIS.

TONY KNOWLES, GOVERNOR

Mr. Dave Arrasmith

2

September 28, 1995

**Alaska Department of Fish & Game NEPA and other comments**Effects of Rescission Bills

By the time the FEIS is released it is possible that a "Rescission" or "Log Salvage" bill passed in Congress could affect this timber sale. The implementation of HCA's and goshawk protection measures, for example, were used as justification for "restructuring," if not essentially eliminating the concept of wildlife retention in the amended 1979 forest plan. Abrupt changes to HCA's and goshawk guidelines now raise significant ACMP concerns regarding both the relocation of units and the potential lack of an adequate wildlife protection strategy. How will the FS analyze how a "Recision Bill" would affect implementation of the Lab Bay ROD?

**AK-2**Falldown and Resource Sustainability

The state's review comments on the CPOW DEIS and FEIS expressed concerns about what appeared to be an accelerated rate of timber harvest within that project area, which hastens the adverse effects of the first rotation's harvest on production of old-growth dependent wildlife. These concerns are much the same for the Lab Bay EIS.

The Lab Bay DEIS states that "**hard falldown**" due to suitability factors such as very high mass movement index (MMI) soils, low site index, and stream buffers was estimated at 15.4% of the tentatively suitable base" (pages 3-129). **Soft falldown** due to harvest type factors may be approximately 15%. Additional timber falldown due to economic factors in the preferred alternative were estimated by the FS to be another 52%. These factors would seem to indicate that this project area could be receiving harvest levels which may be unsustainable in the long-run.

**AK-3**

These concerns are further exacerbated given the recent FS recommendations for additional protection of each of karst and wildlife which have not yet been considered in the calculation of timber falldown. Regarding wildlife viability concerns, the FS has reported that interim measures will protect about 30% of the old growth until completion of the Forest Plan Revision and that "the large amount of old growth included in these areas suggests that effects to timber supply could result from the forest planning process" (pages 3-130). In attempting to address the emerging conflicts of timber supply vs. logging on karst, the FS has reported that: "The draft standards and guidelines recommend restriction of most commercial timber harvest activity on high vulnerability karst. Approximately 48% of the suitable timber base in the Lab Bay Project Area is located on high vulnerability karst" (pages 3-130 to 131).

**Responses to State of Alaska****AK-2**

The Final EIS incorporates federal legislation in effect at the time of Final EIS preparation. The 1995 Rescission Act does not affect 1996 Forest Service timber sale planning. Legislation that is passed subsequent to publication of the Final EIS and the ROD would be addressed during final layout and sale implementation.

Each alternative proposed in the Final EIS incorporates a strategy to maintain old growth habitat. Each strategy protects old growth to a different level, yet each provides protection for an equal or greater number of acres than the 1979 TLMP retention plan. Alternatives 3, 4, and 6 minimize fragmentation and road construction within large, contiguous blocks of old growth and Alternatives 4 and 6 would maintain corridors between these blocks. The proposed strategies allow the Forest Service to maintain options for future Forest Plan revision decisions regarding size, spacing, and location of old growth retention areas.

**AK-3 - 5**

The state's concerns regarding falldown and resource sustainability are noted. The Final EIS addresses the issue of cumulative timber harvest within the Project Area, based on the current Forest Plan (TLMP 1979, as amended) and the currently implemented standards and guidelines. The Final EIS also addresses cumulative effects of timber harvest on old-growth habitat and wildlife to the year 2054, using the TLMP (1979, as amended) projections of future harvest.

Field verification was performed on the majority of harvest units and roads proposed under the Lab Bay sale. Project-specific information on streams, soils, timber, and logging system feasibility was used to provide reliable estimates of timber available during this sale. This project-specific information was provided, along with information from other project areas and with the results of the Ketchikan Area Update (performed in conjunction with the Control Lake EIS), to the TLMP Revision Team for use in developing alternatives for the Forest Plan Revision (1996 TLMP Draft Revision).

Long-term timber supply, old-growth habitat management, subsistence, falldown, and viability of wildlife populations on the Tongass National Forest are addressed in the 1996 TLMP Draft Revision. These issues cannot be addressed solely through individual project



## Responses to State of Alaska

Mr. Dave Arrasmith

3

September 28, 1995

The long-term sustained yields of (1) harvestable surpluses of old-growth dependent wildlife and (2) old-growth timber supply both need an expanded analysis in the FEIS. The Polk Inlet FEIS, for example, clarified that because of economic falldown, timber sustainability in the project area is dependent upon the assumption that timber values will need to continue to increase and/or improved logging systems will need to be developed to access currently marginal timber (Summary, page 23) and that "the timber supply can support the projected harvest through 2050 only if economic conditions improve substantially over time" (Vol. 1, pages 4-74). The FS reported a similar finding within this DEIS, "The current timber supply can support the projected harvest in the Lab Bay Project Area through 2054 only if falldown and changes in land use are considerably less than estimated using currently available data and assumptions" (Summary, page 11). Additionally, however, the Lab Bay FEIS also needs to discuss the fact that even if future timber values and logging systems substantially improve, the concerns for wildlife viability, harvestable surpluses for hunters, and high vulnerability karst significantly complicates keeping such areas within the suitable timber base. In other words, the FS timber harvest calculations currently used to compute sustainability are based on what appears to be the maximum possible number of "suitable" acres. Timber harvest calculations that are overly optimistic are detrimental to sustained yields of old-growth dependent wildlife for human utilization and to ensure viable populations are maintained and well-distributed.

AK-4

We disagree that timber supply sustainability is exclusively a Forest Plan-level issue. Timber targets established in a forest plan need to be field-verified to check the supply assumptions upon which the targets were based. Project-level timber supply falldown should alert the FS to the high risk of following unsustainable TLMP timber supply targets. These targets threaten sustained yields of old growth-dependent wildlife upon which subsistence and general hunters depend, as does the tourism industry. This is an issue which is especially pertinent to Sec. 41.17.060 (c) (1) and 11 AAC 95.185 (a) and (e).

AK-5

Although the ACMP issues are also NEPA concerns, our primary NEPA concern is that within this project area the FS plans to convert approximately 87% or more of the tentatively suitable and available commercial quality forest land (CFL) from old-growth to second-growth by the end of the rotation. Although measures are being taken in the short-term to protect wildlife, subsistence, and high-vulnerability forested karstlands, most of these protection measures and deferrals are only of a temporary nature. Consequently, the cumulative impacts anticipated from sales such as Lab Bay will, as currently planned, significantly compromise important wildlife, subsistence, and karst resources. At the end of the rotation when the harvest of Tongass old growth will cease, for example, the FS models predict cumulative losses in wildlife habitat capabilities in the project area as follows: brown creeper (-84%), hairy woodpecker (-

AK-6

design, as the resources are managed on a larger scale. The National Forest Management Act regulations require that Forest plans be revised on a 10- to 15-year cycle to adapt to changing views, resource uses and demand, and natural resource knowledge. The current Forest Planning process implements this direction, and incorporates project-level information into its Forest-wide management plan.

AK-5  
(Cont.)

The cumulative losses in habitat capability predicted for 2054 assume implementation of the LUD's strategy identified in the 1991 TLMP Draft Revision. The declines displayed in the EIS are worst case scenarios and should be viewed as such. The TLMP Draft Revision is continuing to undergo modification, and in the fall of 1994, due to concerns over wildlife viability, interagency teams were convened to conduct conservation assessments, including a Viability Synthesis Resource Analysis. These assessments are providing a scientific basis for incorporating viability considerations into the TLMP planning process. Each Lab Bay alternative incorporates a strategy for protection of old growth habitat. These strategies meet or exceed the acreage designated for retention in the 1979 TLMP, and allow the Forest Service to maintain options for future Forest Plan revision decisions on old growth management. The old growth strategy incorporated into Alternative 6 is consistent with the 1996 TLMP Draft Revision preferred alternative.

AK-6

Mr. Dave Arrasmith

4

September 28, 1995

**AK-6**

81%), red-breasted sapsucker (-64%), marten (-52%), Sitka black-tailed deer (-51%), and wolf (-46%).

When these cumulative wildlife habitat losses within the project area are combined with similar reductions of old-growth habitat on adjacent FS lands, along with potentially greater reductions on private lands on Prince of Wales Island, the result would likely be a significant decline of biological diversity of old-growth dependent species. Unfortunately, a comprehensive inventory of species occurring within the project area to document their distributions and abundances has never been accomplished. Except for deer, comparatively little is known of the habitat requirements, ecological relationships, or genetic variability of species within the project area, which intensifies viability concerns pursuant to the National Forest Management Act. It is particularly noteworthy that the preceding discussion regarding timber availability and sustainability also assumes that the viability concerns associated with the projected timber harvest levels through the rotation are adequately addressed, and that there will not be a need to increase habitat protection measures for any of the biota occurring within the project area. This seems to be an unrealistic assumption which is lacking in supporting data. The current approach of seeking a maximum amount of operable timber does not appear to incorporate "safety-factors" which would allow for any margin of error. Also, managing for minimum viable populations will not provide sustained yields of wildlife for hunters and non-consumptive users.

**AK-7**

Additional specific NEPA concerns are as follows.

#### Karst and Caves

Approximately 47,599 acres of the project area are commercial forest lands (CFL) which still exist as old growth (Vol. 1, pages 3-25), but only 27,067 of these suitable forest lands are not located on high vulnerability karst (pages 3-27). Approximately 43% of the remaining CFL is located on high vulnerability karstlands and, if such lands were excluded from the overall timber base, there would be a 43% reduction in the suitable harvestable acres (pages 3-27 and 131). The FS is to be commended for the work it has accomplished thus far regarding caves and other resources associated with karst topography. Considerable significant cave resources, some of the best on the Tongass, are found within the Lab Bay project area.

**AK-8**

Additionally at the present time, about 33,425 acres (70%) of the total uncut CFL are categorized as being of normal operability and 14,174 acres (30%) are of difficult or isolated operability (pages 3-216). Approximately 26,531 acres within the project area are either clearcuts or second growth (pages 3-25). About 44,577 acres of the FS lands within the project area are scrubby muskeg forests and another 6,851 acres are non-forested (pages 3-72). The current Tongass Land Management Plan (TLMP) planning

## Responses to State of Alaska

**AK-7**

Refer to response to AK-6.

**AK-8**

Since 1988 the Ketchikan Area of the TNF has been involved in an active program of cooperative inventory, exploration, mapping, and evaluation of the caves and their associated resources. A summary of the evolution of cave and karst management on the Ketchikan Area, and in particular of the Lab Bay Project Area, is provided in Chapter 3 of the EIS. The Federal Cave Resources Protection Act requires that all designated significant caves be protected. The Ketchikan Area continues to evaluate potential effects to cave resources in the Lab Bay area to better assure that important caves and their scientific values will not be damaged by project activities. Alternatives 3 and 6 emphasize protection of high vulnerability karst resources. The 1996 TLMP Revision addresses the protection of karst resources Forest-wide. Alternative 6 defers harvest on high vulnerability karstlands, and meets the most stringent standards and guidelines proposed in the 1996 TLMP Draft Revision.



## Responses to State of Alaska

September 28, 1995

5

Mr. Dave Arrasmith

direction would harvest timber on the high vulnerability karstlands. Karstlands are a unique biophysical feature and caves may contain unusual or rare biota and paleontological records of importance. We urge the FS to continue to evaluate potential threats to cave resources in the Lab Bay area prior to the signing of a new ROD to better assure that important caves and their scientific values will not be damaged by project activities.

AK-8

Wolf

The DEIS lacks an adequate assessment regarding project effects on wolves. The most contemporary information available should be used for a more in-depth analysis of this topic in the FEIS. Stronger mitigation measures, such as the retention of the most important deer habitats and strengthened road closure measures, should also be more fully considered in the FEIS.

AK-9

Franklin's grouse

Franklin's grouse, typically found in drier habitats, occur within the project area, but have never been studied to determine their habitat requirements in Southeast Alaska. When Franklin's grouse are evaluated for viability and distribution concerns using the "V. Pop. Committee" methods, however, this species receives a total score of 139 out of 174 possible points, or 80%. This would give it a ranking at or near the top of those species thought to have viability or distribution concerns. The FS should provide assurances that their planned activities adequately provide for this species in the Lab Bay project area.

AK-10

Monitoring/Mitigation

More specific plans to avoid and minimize potential adverse effects to wildlife and fish resources should be developed and presented. The FEIS should clearly describe all specific monitoring and mitigation activities to eliminate vague and undefinable results. Thresholds of impacts should be clearly identified in advance, and if exceeded, should trigger specific mitigation measures. A list of wildlife/fish species of concern should be developed to focus the monitoring efforts during project implementation. The FEIS should also include plans to effectively monitor the impacts to wildlife populations which are a result of project activities.

AK-11

The most current information on wolves in Southeast Alaska has been incorporated into the Final EIS. In addition, Alternative 6 retains several areas of important deer winter range. This is discussed in the Environmental Consequences section.

AK-9

Franklin's grouse is not a Forest Service Management Indicator or Sensitive Species, and is not federally listed or proposed for Threatened, Endangered, or Candidate (species of concern) status. For these reasons, it was not specifically addressed in the EIS. Many measures for the protection of old-growth dependent species and their habitats have been incorporated into the design of the alternatives and individual units, including wildlife leave areas, green tree retention, road access management, and old-growth conservation strategies. Measures that provide habitat protection for old-growth dependent species are expected to also benefit Franklin's grouse.

AK-10

Refer to response to AK-28.

AK-11



## Responses to State of Alaska

### ANILCA SEC. 810 (a) COMMENTS

Available subsistence research, wildlife modeling, harvest reporting, and FS ANILCA Section 810 procedures and requirements, when taken together, would permit a thorough examination of the impacts to subsistence uses of this timber sale. The following comments will examine how the FS has used best available data and whether or not the FS has followed accepted procedures in making Section 810 determinations in this document.

We would like to commend the FS on the quality of the subsistence material presented in this DEIS. Chapter 3, "Environment and Effects, Subsistence" included new data obtained from interviews of subsistence users in the project area. These interviews supplement previous work, adding additional site-specific information resulting in a more current sense of subsistence activities. Tables and graphs showing subsistence harvest by community and resource, and TRUCS maps, illustrating deer harvest of each community reveal the importance of subsistence to the communities affected by the Lab Bay project. We are particularly pleased to see the inclusion of Table 3-136 which includes subsistence ratings of WAAs by community. Deer harvest data should be updated in the FEIS to include the most recent data.

AK-12

A critical element of the Lab Bay sale is its potential impacts on subsistence, particularly deer harvest. The preferred alternative will harvest a very large volume (66 mmmbf) of timber, construct approximately 55 miles of new roads, and a new log transfer facility (LTF) in close proximity to several subsistence communities. We fear that this timber sale combined with the impacts of the Central Prince of Wales, Control Lake, and Polk Inlet sales, will have significant adverse effects on subsistence resources. The FS confirms this by stating that, "All alternatives could significantly restrict subsistence use of deer and black bear because of existing conditions and projected cumulative effects" (Summary, page 12). The following comments speak to these concerns.

AK-13

#### Selection of Lab Bay as a Project

The selection and scheduling of this project does not appear to have been influenced by subsistence considerations. All project area WAAs presently fail to meet ADF&G deer population goals. Additional logging in the area will only exacerbate this situation. Natural restrictions on access have kept deer harvest levels low for WAA 1527 but if extensive logging occurs in this area, increasing road access west of El Capitan, it is likely that hunter competition will increase. Habitat capability for WAA 1528 is currently below that required to sustain the average documented deer harvests.

Increased access due to construction of additional roads in WAA 1528 can be expected to increase use and harvest of deer. Deer population goals for WAAs 1529 and 1530 are not met by any of the project's alternatives. Deer habitat capability in all project area WAAs would fail to meet ADF&G goals by 2004, and would be further reduced by 2040 and 2054, because of cumulative effects of other timber sales in the project area. If increased access and competition due to road effects are also factored in, this effect is likely to occur even sooner. If minimizing effects was an important planning

AK-14

The ID Team subsistence specialist has conducted an analysis of two additional years of ADF&G harvest information (1992 and 1993). For the most part, the pattern which emerges from use of the four-year time series is consistent with that of the six year time series. Tables 3-131 and 3-132 are updated in the Final EIS. These tables indicate that once 1992 and 1993 are incorporated in the time series, the subsistence harvest of deer from the Project Area is, as a percentage, somewhat higher than is indicated by the average of 1988-1991. This points out that 1991 was an atypical year — but that the use of a time series buffered the effect of this perturbation adequately as the two averages (for 4 years as opposed to 6 years) are sufficiently close as to be reasonable representations. The absolute magnitude of the deer harvest varies from year-to-year, but was significantly higher during the period 1988-1990 than for 1991 to the present.

Table 3-135 presents information to evaluate the importance of the Project Area for specific communities. This table has not been updated in the Final EIS. Preliminary analysis was performed sufficient to determine that the information as presented would not change in any significant way. The changes that would occur are for the most part those that one would expect from the lengthening of the time-series used. The number of WAA's comprising each category for some communities (especially those with large harvest areas) may change, and the threshold percentages may also change slightly. The only changes for Project Area WAA's are:

for Craig WAA 1530 changes from "low use" to a border line "main use" WAA,

for Klawock WAA 1528 changes from a "main use" to a "low use" WAA, and

for Metlakatla WAA 1527 changes from a "main use" to a "low use" WAA.

None of these appear to be especially significant, and highlight the expected variation in subsistence use patterns from year-to-year.

To produce an updated version of this table for publication and make associated changes in the text (and especially later figures) would require a great deal of time and would not substantially change the results of the analysis.

Mr. Dave Arrasmith

6

September 28, 1995

ANILCA SEC. 810 (a) COMMENTS

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AK-13

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AK-14

**Responses to State of Alaska**

AK-13

Such effects are a possibility. The analysis provided will allow the decision-maker to balance all potential effects to reach a balanced decision within the context of multiple-use and sustained yield management, while minimizing potential effects upon subsistence resources and subsistence users.

AK-14

Most if not all of the Tongass National Forest is significant as a subsistence use area for at least one community. This is especially true for those parts of the TNF within the primary sale area for the Ketchikan Pulp Company Long-Term Timber Sale contract. Any timber harvest activity could have potential adverse effects upon subsistence activities within this area and, while these might be less for some communities, they could well be more significant for others. Appendix A of the EIS summarizes the reasons for scheduling timber harvest in the Lab Bay area.



## Responses to State of Alaska

AK-14

goal, Lab Bay would not be scheduled for significant logging as long as other areas on the Tongass are available for logging where subsistence impacts might be less.

AK-15

In particular, further logging in WAA 1529 (Units 527-206, -226, -270, -286 and 529-257, -259) should be avoided in order to protect Point Baker and Port Protection resident's most important deer harvest areas. Additionally, logging on Thorne Island (WAA 1530) should be avoided in order to protect Whale Pass resident's deer harvest areas.

Roads

All of the alternatives call for significant road building. We are concerned about the effects of roads on subsistence access and competition. Roads will likely be used by hunters with off-road vehicles (ORVs), mountain bikes or nonresident hunters who are logging in the area. Roads closed to standard vehicles after logging operations are concluded will still receive increased use by hunters on ORVs, motorcycles, mountain bikes, and on foot.

AK-16

Northwest Subsistence Use Area Units; Road and Fragmentation Effects

The Northwest Subsistence use area would be affected by new road construction. Units 532-219, -220, -221, -223, and -231 (WAA 1529) to the east of Red Bay are in the high-use subsistence area of several communities (DEIS; TRUCS maps and table 3-135) in a previously unharvested, unroaded area. Logging operations and its concomitant road network in the Northwest Subsistence use area would reduce deer habitat capability immediately, followed by long-term indirect effects resulting from increased access. While logging is taking place, road access could be expected to increase hunting effort in this area. Even though roads will be closed after logging is over, hunters on ORVs, motorcycles, mountain bikes, and on foot will still be able access this area. Although units 534, 1-204 and -211 (WAA 1528), north of Salmon Bay, are not a principal use area for any community, it is used by several. This area is already below deer habitat capability required to support the average documented deer harvest, as well as below that required to meet ADF&G's deer population goal.

AK-17

Logging in these units would locally reduce habitat capability and increase hunting effort due to increased road access. Because this new road would provide access to an unroaded area and almost reach the north shore, it is likely that it would attract hunters. Increased hunting effort while logging is active is probable, and closing this road once logging is over will not totally eliminate hunter's access (see our comments above). Although Units 533-248, 533-249, and 534-218 (WAA 1528), (included in all action alternatives), are not located within mapped high-use community subsistence use areas, increased fragmentation of old-growth (winter deer habitat) will decrease the population of deer available in the future. Subsistence users have expressed concern over breaking the old-growth forest corridor between Red Lake and Salmon Bay Lake. Although subsistence users may not actively use these areas, they value them as game refuges and are concerned about the areas' habitat integrity.

AK-15

Your comment regarding logging in WAA 1529 was considered along with others and is reflected in the Final EIS under Alternative 6, which does not propose to harvest units 527-206, 226; 529-270, 286, 257, and 259. Also, under Alternatives 6 and 4, timber on Thorne Island would be harvested under the Uneven-Aged Management Plan.

AK-16

Increased access due to road construction is a concern. This is analyzed in the EIS and access management measures are suggested. With the exception of approximately 2 miles, all newly constructed roads are proposed for closure. In addition, over 50 miles of existing open roads are proposed for closure under the action alternatives. The possibility of increased non-motorized and/or access management use even after such measures are implemented is acknowledged. Please refer to the Final EIS Chapter 2 table "Comparison of Environmental Consequences by Alternative".

AK-17

Your comment was considered along with others and is reflected, in part, in the Final EIS under Alternative 6, which defers harvest on many of the units you have identified as being of concern. Units 532-219, 532-220, and 534-218 are proposed for harvest under Alternative 6.



Mr. Dave Arrasmith

8

September 28, 1995

Calder Tie Road

Development of a tie road connecting Road 29 near Labouchere Bay with Road 29 near Calder Bay would have significant effects on subsistence use in WAA 1527. The creation of a large "loop" in the western part of the project area would increase road access to the southern and southwest portions of the project area beyond El Capitan. The effects from the Calder Tie Road would be most significant on the communities of Port Protection and Point Baker. Although WAA 1527 presently has deer habitat capabilities that exceed harvests, increased access due to the Calder Tie Road would increase harvest close to (or beyond) that supportable by local habitat capability. Closing the Calder Tie Road loop after active timber harvesting may mitigate the long-term effects somewhat, but closing of roads following timber harvest activities is no guarantee that hunters will not continue using these roads (see our comments above).

AK-18

Effects of Harvest on Thorne Island

Thorne Island, included in WAA 1530, is important to several communities on an opportunistic basis and very important as a subsistence use area for Whale Pass. Whale Pass residents "Core" high-use areas consist solely of WAA 1530, containing Thorne Island and the area surrounding Whale Pass. Conventional timber harvest on Thorne Island would affect subsistence users by reducing local deer habitat capability in the long term. The road network would increase access, leading to increased competition for deer. This increased hunting pressure could disrupt the subsistence pattern for Whale Pass residents, possibly displacing subsistence hunters to other areas.

AK-19

If timber harvest were to occur on Thorne Island, it should be implemented in the manner described by Alternative 4. Under this alternative, timber harvest on Thorne Island will be conducted according to an uneven-aged management plan using helicopter yarding methods. No LTF or roads would be constructed on Thorne Island under this alternative. This uneven-aged harvest management plan would have less of an effect on subsistence users of Thorne Island. This is one possible reason that an LTF on Thorne Island could be determined inconsistent with the ACMP pursuant to 6AAC 80.120 (SUBSISTENCE) if the conventional cable yarding option is selected for Thorne Island in the ROD. Additionally, active logging could be suspended during the deer hunting season in an effort to lessen impacts on subsistence users. Although alternatives which include an uneven-aged harvest management plan will lessen the effects on Thorne Island itself, hunting access would be increased for the rest of WAA 1530.

Impacts and Competition from Logging Camps

We know that competition for wildlife resources will temporarily increase due to increased access and the presence of the timber work force. For some time we have suggested that the FS develop a site-specific model estimating the demand on wildlife by logging camp personnel. As with the regional model, the site-specific model should be tied to population (i.e. estimated population of the work force domiciled in the project area). It should not be assumed, however, that the percentage of remote logging community residents who hunt and fish is comparable to that of the general population: in fact, evidence suggests that it is higher. Our past research in GMU 4

AK-20

**Responses to State of Alaska**

AK-18

Your comment was considered along with others and is reflected in the Final EIS under Alternative 6, which does not propose construction of the Calder Tie Road.

AK-19

Your comment supporting the Thorne Island Uneven-aged Management Plan is noted. Alternative 6 will utilize the Thorne Island Uneven-aged Management Plan.

AK-20

Most if not all logging camps currently restrict the use of company vehicles for hunting, in that they forbid the transportation of firearms in company vehicles. Those residents of logging camps who qualify as residents of the state of Alaska must, under current federal laws and regulations, be considered qualified subsistence users by the Forest Service. The Forest Service has no authority to act otherwise in this matter. The Federal Subsistence Board is the proper agent to contact in regard to possible restrictions on the subsistence activities of logging camp residents.

suggests that the average deer harvest in logging camps' is 1 to 1.5 deer per person per year (based on the entire population of the camp, not just those employed in timber harvest or of age to hunt)(ADF&G Harvest Data).

We understand that logging camps are considered by the FS to be subsistence communities in part because of their rural status. Realistically however, logging camps provide a new focus of fish and wildlife harvest which is superimposed on the long-term existing use patterns of rural communities which have customary and traditional ties to specific subsistence use areas. Logging camp residents are also the hunters most likely to have motorized vehicles available during logging operations and most able to take immediate advantage of the road system.

We suggest that the Lab Bay plan include restrictions on use of company vehicles or transportation for hunting and on camps maintained as bases for hunting in the project area. While we recognize and support the right of logging camp residents to hunt and fish, we do not believe that project activities should provide them with hunting and fishing opportunities that are not available to the general public. These restrictions would be similar to those in place for remote camps associated with resource extraction in other parts of Alaska.

#### Effects on Specific Communities and WAAs

The three communities that will be most affected by the Lab Bay project are Point Baker, Port Protection, and Whale Pass. Several other communities, Coffman Cove, Hollis, Klawock, Metlakatla, Petersburg, Craig, Wrangell, and Ketchikan will be affected to a lesser extent. All of the action alternatives could significantly restrict Point Baker, Port Protection, and Whale Pass subsistence activities through effects on deer abundance and distribution. Affects due to increased hunter access and competition could also significantly restrict subsistence activities for these communities.

Further habitat reduction may require the restriction of non-subsistence take in WAAs 1528, 1529, and 1530. Under the preferred alternative, habitat capability in WAA 1528 would be reduced below that required to support historic subsistence deer harvest. Since nonsubsistence hunting is minimal in WAA 1528, we suggest that habitat preservation be considered as mitigation to offset this projected decline.

#### Cumulative effects on subsistence deer

Although the project area is limited, Point Baker, Port Protection, Whale Pass and the other communities' subsistence patterns are also being affected by recent timber sales. Timber harvest on private lands and the Central Prince of Wales, Control Lake, and Polk Inlet timber sales also affect the abundance, distribution, access to and competition for subsistence resources harvested by the project area communities. To assume that further timber harvesting will have little or no effect on subsistence because deer are presently being harvested at levels greater than the assumed harvestable percent of current modeled habitat capability fails to address the FS's responsibility to maintain subsistence resources in perpetuity.

## Responses to State of Alaska

### AK-21

Your comment was considered along with others and is reflected in Alternative 6 which avoids harvest in WAA 1528 with the exception of two (and a portion) units in VCU 534.

### AK-22

The EIS concludes that any of the alternatives may significantly affect subsistence use. Because of the nature and limitations of Habitat Capability Models (HCM's), actual populations may be higher than the sustainable population figure estimated by the model. Since one of the short-term effects of timber harvest is to actually increase the production of deer browse and the limiting factor on deer populations in the HCM is winter snow protection (and not so much the absolute amount of food available), in the absence of severe winters deer populations can be expected to be larger than the sustainable population figure derived from the model.

It is currently the Federal Subsistence Board's responsibility to manage subsistence resources on federal land. Recently, based on the advice of Southeast Alaska Regional Subsistence Advisory Council which represents local subsistence users, the Federal Subsistence Board allowed the harvesting of does in addition to bucks after October 1st in the Lab Bay Project Area. This indicates that presently the deer population is adequate to supply subsistence users.

Your statements regarding supply of animals for subsistence users are based on information obtained from the USGS habitat capability models. It should be noted that habitat capability models are not intended to predict population levels or set bag limits. Their use is intended to give a relative comparison between alternatives of the effect on habitat, not make projections of actual animal numbers. For this reason the 1996 TLMP Draft Revision no longer uses habitat capability models for any species except for deer, and that model has been revised (See Appendix P). There is a very high risk associated with using these models to predict population availability for subsistence users, rather than as a relative indicator of risks. The current mechanism for managing subsistence resources is through the Federal Subsistence Board which looks at input from subsistence users, past harvest levels, hunter success rates and other information including habitat capability models in making their determinations.

### AK-20

### AK-21

### AK-22



## Responses to State of Alaska

September 28, 1995

10

Mr. Dave Arrasmith

### Section 810 Determinations

We question whether the alternatives proposed for the Lab Bay Project are necessary and consistent with sound management of the public lands. None of the alternatives avoid a significant restriction of subsistence uses. The ANILCA placed an emphasis on the maintenance of subsistence resources and lifestyles and since 1990 the Federal government has been responsible for the management of subsistence resources on federal lands. Failure to provide an alternative that does not significantly restrict subsistence uses brings into question whether or not the Lab Bay Project is necessary and consistent with sound management of the public lands.

AK-23

AK-23

All alternatives considered may significantly affect subsistence activities. Because of cumulative effects, even the No Action Alternative may impose such effects. The analysis clearly presents the range of effects upon the most likely affected communities in terms of the alternatives considered, and allows the Forest Service to reach a balanced decision within the context of multiple use and sustained yield management, while affecting current patterns of subsistence use as little as possible.

The Lab Bay Project DEIS also fails to show that the project involves the minimum amount of public lands necessary to accomplish the purpose of the proposed activity. We believe efforts taken to protect what the FS considers "highest value subsistence areas, lands adjacent to existing road systems, beach fringe habitat, and areas in close proximity to communities," (DEIS, 3-315, 316) is insufficient for the protection of subsistence resources. The FS has failed to take into consideration the importance of undisturbed, old-growth, interior forests for the maintenance of deer populations. By emphasizing the protection of "highest value subsistence areas," and failing to protect other deer habitat, the proposed activity involves more than the minimum amount of public land necessary to accomplish the purpose of the proposed activity.

AK-24

AK-24

Alternative 6 defers harvest on many of the units noted by the public as high value subsistence areas.

Refer also to response to JK-3 for specific discussion of ANILCA Sections 802, 804, and 810.

Alternative 6 was created to attempt to more fully address public concerns for subsistence, wildlife, and visuals, while continuing to protect karst resources. In addition, this alternative, along with Alternatives 3 and 4, minimizes fragmentation and road construction within large, contiguous blocks of old growth. All action alternatives are also intended to meet as closely as possible the stated purpose and need for the project while meeting the objectives of the alternative framework.

AK-25

AK-25

See responses to comments AK-17 and AK-23.

AK-26

Your comment supporting Alternative 3 with the inclusion of the Thorne Island Uneven-aged Management Plan was considered along with others and is reflected in Alternative 6 of the Final EIS.

AK-27

Field inventory was conducted on all harvest units and roads on areas mapped as high or very high hazard for mass movement. A hydrologist/soils scientist visited every unit proposed on MMI 3 and 4 soils. Several areas were removed from the suitable timber base due to very high mass movement hazard soils (Appendix A of the Lab Bay Soil and Water Resource Report, Metzler 1993).

Proposed harvest and road locations were also evaluated using a sediment transfer hazard rating system developed by Hogan and Wilford (1989). Hazard ratings for all proposed harvest units and roads are presented in Appendix B of the Soil and Water Resource Inventory Report (Metzler 1993). Tables 3-20 through 3-23 display only those units and roads which received a "high" sediment transfer hazard rating.

AK-27

### Alaska Department of Environmental Conservation NEPA Comments

1. DEC supports the choice of Alternative 3 as the preferred alternative, as it appears to best address water quality concerns. However, we suggest that the harvesting plan for Thorne Island that is proposed in Alternative 4 be incorporated into the R.O.D. Alternative. Based on our field observations of the Campbell Timber Sale, we believe that this plan, which incorporates selective harvest and helicopter yarding to salt water, best protects water quality and is financially viable.
2. DEC appreciates the level of information displayed in this EIS. In particular, the amount of "ground-based" information included is greater than that for most EIS's. The discussion of unit-specific mitigation is also appreciated.

The one concern that we have is with the interpretation of the information provided. An example that is potentially of the greatest interest to us, is the difficulty in interpreting the information provided in Tables 3-20 to 23. Specifically, we cannot, with the information provided, make the link between the data displayed and the conclusions that were reached. We can only assume that through some analytical process that was not specified, the risk of exceeding water quality standards in the affected streams was determined to be low enough



## Responses to State of Alaska

### Section 810 Determinations

We question whether the alternatives proposed for the Lab Bay Project are necessary and consistent with sound management of the public lands. None of the alternatives avoid a significant restriction of subsistence uses. The ANILCA placed an emphasis on the maintenance of subsistence resources and lifestyles and since 1990 the Federal government has been responsible for the management of subsistence resources on federal lands. Failure to provide an alternative that does not significantly restrict subsistence uses brings into question whether or not the Lab Bay Project is necessary and consistent with sound management of the public lands.

AK-23

AK-27  
(Cont.)

The relative risk of sediment delivery was evaluated assuming no BMP's would be implemented. As such, it is a "worst case" rating. Implementation of BMP's should provide for meeting State Water Quality standards in all units and roads.

Some units and roads do have a higher risk than others due to steep slopes and proximity to a stream channel. The location, number and acreage involved in these units are displayed in Tables 3-20 through 3-23. These tables provide a means to compare the risk of sediment delivery between alternatives. However, it is important to emphasize that there are no harvest units located on slopes with a very high hazard (MMI<sup>34</sup>) of mass movement.

AK-24

The Final EIS includes a more detailed explanation of the ratings in Table 3-20 through 3-23. A footnote has been added to the tables to clarify that the units and roads were rated without considering BMP's.

All of the project's alternatives, including the no action alternative, result in a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer. Since this is the case, all of the alternatives have an obvious and common shortcoming which is not being adequately addressed by the FS. Therefore, we do not believe that the FS has presented an alternative which takes reasonable steps to minimize adverse impacts upon subsistence.

AK-25

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AK-26

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AK-27

## Responses to State of Alaska

September 28, 1995

11

Mr. Dave Arrasmith

such that the units could or should be harvested. In the FEIS, we would appreciate a more thorough discussion of how the water quality risk determinations are made.

AK-27

3. Monitoring: While the monitoring plan seems to be well thought out, we are interested if any attempt was made to integrate this project with the Ketchikan Area Effectiveness Monitoring Strategy.

AK-28

4. Class "IIb" Streams: This is the first EIS that we have seen which redefines and categorizes the riparian protection requirements for Class II streams. According to the EIS, "Class IIa are streams that flow directly into Class I streams and are subject to TTRA stream buffer requirements. Class IIb streams are those that flow into Class II or Class III streams" (and are not afforded TTRA buffer protection) (pg. 3-74). This is a major departure from the way Class II streams have been treated in the past and is inconsistent with the riparian protection standards that are proposed for the Eight Fathom and Northwest Baranof projects which are currently under NEPA review. Both of those projects incorporate the traditional riparian protection standards for Class II streams which include minimum 100-foot buffers along all Class II streams that flow into (and affect) Class I streams.

The Eight Fathom DEIS defines "Category B" as "Class II streams that do not drain into a Class I stream" (Vol. II, pg. H-2) (emphasis added). The Northwest Baranof DEIS doesn't even distinguish between "a" and "b" categories but, rather, applies the standard buffer protection to all Class II streams that are tributary to Class I streams. In fact, according to that DEIS (chapt. 4, pg. 18), "Minimum 100 foot buffer zones are provided on both banks of all fish streams" (emphasis added). The TTRA requires "...a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited ... For the purposes of this subsection, the terms 'Class I streams' and 'Class II streams' means the same as they do in the Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986." The Aquatic Habitat Management Handbook, however, makes no segregation of Class II streams into "a" and "b" categories.

AK-29

We are unaware of any amendments or other Forest Service documents which direct changes to the current riparian protection standards for Class II streams. In fact, according to the Anadromous Fish Habitat Assessment (AFHA) report, "Current practices on the Tongass do not meet either the goal of the Tongass Land Management Plan to 'preserve the biological productivity of every fish stream on the Tongass,' or the long-term goal of avoiding the possible need for listing of salmon and steelhead stocks under the Endangered Species Act" (pg. 7). The report also states that "...the concern resulting from these findings warrants improving fish habitat protection efforts under current procedures prior to completion of the Tongass Land Management Plan Revision" (pg. 11) (emphasis added). The recent memo from Regional Forester Janik to the forest supervisors and staff directors, dated August 25, 1995, recommending the implementation of the AFHA, suggests that the "class IIb" designation should be revisited.

5. Unit Cards: Although we are pleased to see that channel types have been included for the streams depicted on the unit card maps, the unit cards, in general, are somewhat confusing in that many of the narrative specialist reports do not seem to correlate to what is depicted on the maps. For example, on many cards (e.g., 528-280, 529-212, 538-208, 551-223), there are no protective prescriptions given for streams within the units and depicted on the maps. On

AK-30

Implementation, effectiveness, and validation monitoring are performed at the Forest Plan level. For the Lab Bay Project, this monitoring will occur under the Ketchikan Area Monitoring Strategy (USDA 1994). The Ketchikan Area Monitoring Strategy provides detailed procedures for conducting routine implementation monitoring, to determine whether BMP's and other actions were implemented as specified in unit and road cards. Under this strategy 100 percent of the Lab Bay units and roads will be monitored for BMP implementation. In addition, the strategy describes the process used to develop longer-term effectiveness monitoring questions and procedures, focusing on whether implementation of actions achieved the desired results.

AK-28

Since 1993 the Forest Service has worked with the Alaska Department of Environmental Conservation to develop and implement an annual work plan to prioritize water quality monitoring. Effectiveness of BMP's is being evaluated annually under this program.

The Forest Service Handbook (FSH 2909.22) provides for adjustment of standard practices to incorporate new information and monitoring results. An example of how monitoring is used to adjust standard practices is the implementation of TTRA buffers. Monitoring results showing inconsistency in layout of TTRA buffers led to adoption of new procedures, including the use of laser levels and cloth tape to improve accuracy.

The Lab Bay Project contributes to the Ketchikan Area Monitoring Strategy in three ways. First, the unit and road cards specify mitigation measures and BMP's to be implemented, providing the basis for routine implementation monitoring. Second, the Project Resource Reports identify proposed units and roads that could be selected by the Ketchikan Area for implementation or effectiveness monitoring. Finally, the EIS describes monitoring opportunities that are unique to the Lab Bay Project, and identifies objectives, methods of measurement, and staff responsible for performing the monitoring.

The Ketchikan Area Effectiveness Monitoring Strategy and the Forest Plan Monitoring Program have been integrated into the Final EIS. Chapter 2 of the Final EIS discusses the relationship of the Project activities to the Ketchikan Area and Tongass National Forest monitoring plan.



AK-27

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Class IIa and IIb streams were defined for the Lab Bay analysis based on the 1992 interpretation of TTRA language. Class IIa streams are those "Class II streams which flow directly into a Class I stream"; Class IIb streams are those Class II streams which flow into streams (or water bodies) other than Class I. The terms were used in the Draft EIS to facilitate analysis and discussion of TTRA and other riparian buffers.

The TTRA requires that a minimum 100-foot buffer be applied to each side of "Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited". TTRA does not prohibit commercial timber harvest within 100 feet of a Class II stream that does not flow into a Class I stream. Therefore, in compliance with TTRA, TTRA stream buffers were not automatically applied to Class IIb streams in the Lab Bay Project Area during 1992 field work. Rather, Class IIb streams were reviewed by specialists in the field to assess relative risk to water quality, fisheries and wildlife habitat. Riparian buffers and harvest systems were assigned by the resource specialists based on site-specific information.

Despite the absence of a regulatory requirement, the Thorne Bay Ranger District policy has been to provide 100-foot minimum buffers on Class IIb streams during final unit layout. On November 21, 1995, the Regional Forester provided a letter of clarification regarding stream classification and minimum statutory stream buffers. Two new categories were added to the classification system (Class IV and Non-streams), and it was directed that all Class II streams will be provided minimum 100-foot buffers. Although the Lab Bay fieldwork predated this direction, the minimum 100-foot buffers will be applied to the Class IIb streams during final layout. Due to the low number of such streams within or adjacent to proposed harvest units (8 in Alternative 2, 4 in Alternative 6) and the site-specific buffers prescribed, implementation of these buffers will not substantially affect unit layout, harvest, or harvest volume. The Project unit cards have been updated to prescribe the minimum 100-foot buffer on these streams. The Final EIS has been revised to eliminate reference to Class IIa and IIb streams in the main text.

Refer also to response to SEACC-28 for additional discussion of the Anadromous Fish Habitat Assessment (AFHA) report.



Mr. Dave Arrasmith

11

September 28, 1995

AK-27

such that the units could or should be harvested. In the FEIS, we would appreciate a more thorough discussion of how the water quality risk determinations are made.

AK-28

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AK-30

## Responses to State of Alaska

AK-30

The first part of the comment refers to unit maps that depict streams that are not specifically addressed in the unit card narrative. Units 528-280 and 551-223 do contain one or more small Class III streams. As there were no special concerns identified by the fisheries, forestry, or soils/water specialists, no specific discussion of the streams was included on the unit cards. However, BMP's appropriate to streambank and water quality protection were specified on the unit cards by the soils/water specialist. BMP 13.16 has been added to these two unit cards.

The project paper plan called for unit 529-212 to be laid out adjacent to a Class III stream on the west. Field verification indicated that harvest near the stream had potential to affect downstream water quality into a Class II. Also, the proposed location would have resulted in a blind lead. The resolution column on the unit card has been rewritten to clarify that the unit boundary was moved eastward to resolve this concern. No further water quality mitigation was required for that stream. One small Class III stream shown on GIS to be located within the unit was field verified as not present; the unit card has been revised to show no streams present within the unit.

Unit 538-208, as originally planned, would have included two Class III streams in the eastern portion of the unit. Field work resulted in relocation of the east boundary to a point west of the easternmost stream; partial suspension was specified for the remaining eastern portion of the unit, including the Class III 'seep', to protect water quality. The unit card has been rewritten to clarify the unit redesign.

The second part of the comment relates to streams referenced in the unit cards that do not show on the unit maps. The unit maps are printed using a GIS streams coverage which is not a complete inventory of all streams present on the ground. In particular, some Class III and smaller streams may not be shown because they were too small to be interpreted from aerial photos. In heavily karsted areas, some channels depicted as streams may actually be dry. During the fieldwork for Lab Bay, resource specialists used aerial photos, topographic maps, and existing GIS coverages to locate units. Field notes were recorded in written form and on aerial photo overlays for streams, V-notches, and other important features. The GIS stream coverage was updated to show most new streams, and to remove those that do not exist. However, not



## Responses to State of Alaska

Mr. Dave Arrasmith 11 September 28, 1995

AK-27

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AK-28

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AK-30

AK-30  
(Cont.)

all streams could be mapped to a level of detail appropriate to allow their inclusion in the GIS database. Numerous small Class III streams were identified on the ground within or adjacent to units that could not be accurately mapped outside of the unit from aerial photos. These streams were not updated in GIS, as they could not be accurately connected to downstream waterbodies. For this reason, there are some unit cards that reference Class III streams that do not show on the unit maps. It should be noted, however, that all project field notes, field maps, and photo overlays are included in the Project Planning Record and will be available for use in final unit layout.

The third part of the comment refers to four additional units. Units 528-250, 531.1-242, and 531.1-257 were redesigned based on field information to relocate boundaries to avoid potential effects to streams. Unit 528-251 includes a recommendation for split yarding to protect water quality.

## Responses to State of Alaska

Mr. Dave Arrasmith 12 September 28, 1995

- AK-30** other cards (e.g., 528-251, 529-259, 529-282, 534-225), no streams are shown in the units. yet the narratives indicate they are there and prescribe specific measures for their protection. In addition, on several cards, although no streams are shown within the units, other streams are described that occur somewhere in the vicinity, though it is difficult to determine exactly where they are located and what relevance they have to the specific unit (for example, Units 528-250, 528-251, 531.1-242, and 531.1-257).
- AK-31** 6. Buffer Widths: The DEIS only references slope distance when discussing TTRA buffer widths. Per 11 AAC 95.810(1), buffer widths must be based on horizontal measurements.
- AK-32** 7. Maps: The overall project area map and the maps within the text of the DEIS are somewhat deficient. Very few place names and no watershed or stream names are identified, even though they are consistently referred to in the EIS. Figure 3-9 in Volume I provides the only, though crude, source of reference for the locations of the major Class I and Class II streams in the project area. The FEIS maps should be improved to include, at a minimum, the names of all streams and bays referenced in the text of the EIS.
- AK-33** 8. Lab Bay LTF: The existing LTF at Lab Bay is identified as an A-frame in the EIS. However, the LTF was recently changed to a low-angle slide after the pre-existing A-frame was moved to the North Revilla timber sale project area. This minor detail needs to be corrected and update in the FEIS.
- AK-34** 9. HGC Buffers: "No harvest" buffers are prescribed for certain high gradient contained streams to avoid exceeding the 25% watershed harvest threshold for this fluvial process group. However, given their position on the landscape, these buffers are often highly susceptible to blowdown into the streams they are designed to protect. Selectively harvesting the most wind prone trees (those with high, dense crowns extending above the slope break) and retaining those that are most windfirm (smaller diameter, generally non-merchantable trees) would more effectively minimize the potential for blowdown and subsequent impacts to slope stability and water quality. We would recommend that such a prescription be applied to these buffers, especially in those areas such as Alder and Buster Creeks, which have a documented high windthrow occurrence.

### DEC CWA SECTION 319 COMMENTS

#### 1. Class III Stream Buffers

Blowdown of Class III stream buffers presents a significant concern for impacts to water quality and fish habitat within the Lab Bay project area. According to the unit cards, slope break buffers have been categorically prescribed for all Class III streams which border the units and have the potential for sediment delivery to downstream fish habitat. However, it appears that no consideration was given to windfirmness when laying-out these buffers. According to the EIS, (page 3-122), "*The strongest winds come from the southwest and southeast, therefore windthrow is most likely to occur in mature stands with uniform and dense crown structures along the north edge of clearcut units.*" The following units have Class III streams which border their northern boundaries and have been prescribed for no-harvest slope break buffers:

**AK-35**

**AK-31** The Final EIS text has been revised to indicate that Alaska Administrative Code and Forest Service policy are to implement TTRA buffers using measurement of horizontal distance.

**AK-32** Color printing has been used to increase readability of the alternative maps for the Final EIS. Contour lines are shown only on the large scale (1":1 mile) Project Area map. Names of major roads, streams, and other landmarks have been added to the large scale map, to the extent that space and legibility allow.

Up to date previous harvest coverages are not available for state, private and encumbered lands and so are not depicted on the Project Area map.

**AK-33** The Transportation, Logging, and Facilities section of the Final EIS has been changed to correctly identify the Labouchere Bay LTF as a low-angle slide.

**AK-34** The Final EIS text and unit cards have been revised to indicate that the Riparian Management Areas (RMA's) along the specified High Gradient Contained (HGC) stream channels should be managed in accordance with the objectives for protection of slope stability and water quality. The management goal will be to retain timber within these RMA's; however, selective harvest of windthrow prone trees will be performed as necessary.



## Responses to State of Alaska

Mr. Dave Arrasmith 13 September 28, 1995

Units with slope break buffers on Class III streams that are directly tributary to Class I habitat

527-206: Buffered Class III tributary located a short distance upstream of Class I habitat.

529-220: Buffered Class III stream directly tributary to the Class I habitat of Perue Lake.

529-223: Unit card states "*Deeply incised V-notch along north boundary - potential instability on upper banks*" ... "*High MMI soils; potential for sediment transport to fish stream.*" Class I mainstem of Alder Creek (FP3 channel - sediment deposition zone) located immediately downstream of buffered Class III tributary.

529-270: Buffered Class III stream located on Northwestern boundary of 109 acre unit; tributary to Class I habitat (PA3 channel - sediment deposition &amp; retention zone) located a short distance downstream.

530-230: Class I habitat (AF1 channel - sediment transport & retention zone) located immediately downstream of Buffered Class III reach adjacent to unit; tributary to the Class I mainstem of Buster Creek (FP4 channel - sediment deposition zone).530-236: Unit card states that "*Class III stream along north boundary is unstable.*" Class I mainstem of Buster Creek located immediately adjacent to and downstream of lower unit boundary. \*Class II stream located adjacent to southern unit boundary requires a 100-foot buffer (not mentioned in unit card narrative).

AK-35

531.1-205: Buffered Class III reach located along northeastern boundary of unit; Class I habitat (FP3 channel - sediment deposition zone) located a short distance downstream.

534.1-212: Unit Card states that "*Class III stream along north boundary has deposits of fine sediment in channel; potential to deliver to downstream Class I stream.*"

535-209: Class III stream forms northern unit boundary (though is not mentioned in unit card narrative) and is directly tributary to Class I habitat located a short distance downstream.

Units with slope break buffers on Class III streams that are directly tributary to Class II habitat

533-205: According to the unit card, "*V-notch channels along north and south unit boundary - unstable, high sediment production*" ... "*Potential for sediment transport to fish-bearing stream below.*" Buffered Class III reach transitions to a short reach of Class II habitat (AF2 channel -sediment transport zone) before discharging into the Class I mainstem of Big Creek (FP4 channel - sediment deposition zone).539-220: Buffered Class III stream forms northern unit boundary and is tributary to a short reach of Class II habitat that becomes Class I a short distance downstream. Unit card states that "*Stream near north unit boundary contains unconsolidated material. Active bedload movement associated with debris slide in northwest corner*" ... "*Numerous trout observed in shallow pools of Class II streams. Fair to good spawning habitat in Class I stream. Prevent increased sediment*"

We agree that blowdown of buffers is a significant concern. While blowdown is one method of recruitment of LWD into stream channels, catastrophic blowdown of buffer strips does not meet the objectives of providing streambank stability and LWD recruitment over time. Windfirmness of buffers was evaluated on a site-specific basis. Selective harvest buffers (such as, leave all trees <10 inches dbh within 100 feet of the Class III stream) are prescribed along many Class III streams (See Unit Cards, Planning Record).

During final layout of the harvest, buffers will be reconsidered on the ground with the intent of minimizing potential impacts to the streams. This may include applying special prescriptions such as increasing the width of buffers, or selectively removing windthrow susceptible trees within the buffer.

AK-35

## Responses to State of Alaska

AK-35	Mr. Dave Arrasmith Units with slope break buffers on Class III streams that are not tributary to Class I or II habitat but cumulatively affect downstream water quality 528-212 528-280: Potential stream bank instability on buffered Class III reach -- unit card states "One Class III stream on north boundary has large slide on bank opposite of unit." 531.1-221: Potential stream bank instability on buffered Class III reach -- unit card states "Class III stream near north and east boundaries - potential for slides along upper banks." 531.1-241 533-250	14 September 28, 1995	
AK-36	Given their perpendicular orientation to the prevailing storm winds, these buffers will be highly prone to blowing down into the streams they were designed to protect. This is particularly true for Units 529-220, 529-223, 530-230, and 530-236, as they occur within the Alder Creek and Buster Creek drainages which have documented high windthrow occurrences. Such blowdown can result in substantial and chronic sediment delivery to downstream fish habitat from upturned rootwads and de-stabilized stream banks and sideslopes. Rather than retaining "hard edge" no-cut buffers, these buffers should be selectively harvested to remove the most wind-prone trees (those of larger diameter with high, dense crowns extending above the slope break) while retaining all smaller diameter non-merchantable trees with short, open crowns that are generally most windfirm. This is especially important for the buffers along the Class III streams adjacent to Units 529-223, 529-270, 530-230, 531-205, and 533-205, as they are directly tributary to Class I depositional channel types that are highly sensitive to the impacts of sedimentation on spawning habitat.		
AK-36	2. <u>Other Unit- and Road-specific Comments</u> <u>Units 528-280 &amp; 529-212</u> According to the unit card map and the Fisheries narrative, two Class III streams (HC5 channels) originate within and flow from Unit 528-280. However, no mention is made of these streams in the Water Quality/Quantity report and no protective prescriptions or mitigation measures are proposed to minimize impacts to water quality during unit harvesting (i.e., no requirements for directional felling, full or partial suspension, or removal of harvest-related debris from these streams). This same omission is made for the Class III stream that originates within and flows from Unit 529-212. As a standard rule, BMP 13.16 (Stream Channel Protection) should be prescribed and adhered to for all stream-bearing units, especially for those with streams in the High Gradient Contained process group.		
AK-37	<u>Roads #64-78-29.3, 66-79-25, 66-80-04, and 66-80-05</u> These road segments are identified in Table 3-21 of the EIS as having a high potential for direct sediment delivery to the Class I streams they cross. However, the road cards do not indicate the types of structures (bridges or culverts) that are proposed to complete these crossings. This information is necessary and relevant to determine the provisions being made for the protection of water quality and fish habitat, especially given the identified high		

AK-36 Refer to response to AK-30.

AK-37 The unit and roads cards have been revised to include the requested information. The revised unit cards are presented in Appendix F of the Final EIS; all other unit cards are contained in the Project Planning Record.

potential for sediment delivery. The road cards contained in the FEIS should clearly specify the types of structures to be used for all Class I and II stream crossings. The Alaska Department of Environmental Conservation (DEC) offers the following ACMP consistency and Clean Water Act Section 319 comments on the DEIS for the Lab Bay Timber Sale:

#### DEC ACMP CONSISTENCY COMMENTS

##### *1. Road Maintenance/Closure*

###### *Forest Practices Regulations Road Closure Requirements*

**11 AAC 95.320(b)** Except as provided in (e) of this section, a road is closed when the following activities have all been completed:

- (1) a road is outslopped or water barred as directed by the division or is otherwise left in a condition suitable to control erosion;
- (2) ditches are left in a condition suitable to control erosion;
- (3) in areas accessible to highway vehicles, the road is blocked so that a four-wheeled highway vehicle cannot pass the point of blockage; and
- (4) bridges, culverts, and fills are removed from surface waters, unless the division determines other measures would provide adequate protection; bridge, culvert, or fill removal must be completed in accordance with (c) of this section.

**11 AAC 95.320(c)** Bridge, culvert, or fill removal under (b) of this section must be completed according to the following standards:

- (1) in fish-bearing waters, bridge, culvert, and fill material must be completely removed from the natural streambed and from within the ordinary high water marks, except where such removal would cause adverse impacts to water quality or fish habitat;
- (2) after culvert removal is completed, the walls of the remaining trench must be sloped to the angle of repose or otherwise permanently stabilized to prevent erosion of the walls and siltation of surface waters;
- (3) surplus fill material and bridge stringers must be deposited in a location where they are not likely to re-enter the stream; and
- (4) bridge, culvert, and fill removal must be conducted in accordance with AS 16.05.870.

**11 AAC 95.320(d)** If degradation of water quality occurs due to erosion from a closed road, the forest landowner, the operator, or the person responsible for creating the condition is required to correct the problem.



## Responses to State of Alaska

Mr. Dave Arrasmith

16

September 28, 1995

*11 AAC 95.320(e) A road is closed if it was closed to legal traffic by a permanent barrier before 6/10/93.*

### AK-38

According to the Lab Bay Project Area Map, existing Road #20789 is proposed for closure. This work needs to be accomplished immediately as the road is currently out of compliance with the Road Maintenance and Road Closure requirements (11 AAC 95.315 and 11 AAC 95.320) of the Forest Practices Regulations. DEC recently examined the entire length of this road and identified serious water quality concerns associated with a lack of maintenance. Ditchlines and culverts are blocked in numerous locations and runoff is flowing across the road surface. In other locations, the ditchline is actively downcutting and transporting sediment to active drainages. These problems are most acute in that portion of the road which traverses Unit 533-108. In general, the Road Maintenance requirements of 11 AAC 95.315 require that ditchlines and drainage structures be kept clear and in good repair, and that the road surface be maintained in a condition that is not conducive to erosion. This obviously has not been done.

### AK-39

The 2730 Road, which parallels the Class I habitat of Salmon Bay Creek, also is in dire need of either maintenance or effective closure. Although the Project Area Map identifies this road as being open, that portion in the vicinity of Unit 534-112, and immediately adjacent to the Salmon Bay LUD II boundary, has been blocked by the removal of a Hamilton Bridge on a tributary to Salmon Bay Creek. The condition of the road on the north (inaccessible) side of this stream is not in compliance with the Road Maintenance and Road Closure requirements of the Forest Practices Regulations. It appears that sloughed off outslope material has been collected and inexplicably piled on the road surface in close proximity to the stream. Sediment-laden ditchline water is flowing directly into this tributary and is being transported a short distance downstream to the Class I habitat of Salmon Bay Creek. In addition, stress fractures are present on the outside edge of the road and indicate a high potential for roadbed failure and a slide which, depending upon its extent, may enter nearby Salmon Bay Creek. Direct machine access to correct these problems no longer exists now that the bridge has been removed. However, this road requires immediate attention to alleviate concerns for water quality degradation. It must be either maintained in accordance with the requirements of 11 AAC 95.315 or closed according to the requirements of 11 AAC 95.320. This is especially important given the productive sockeye salmon habitat of Salmon Bay Creek and Lake.

#### 2. Road Location

The proposed spur roads which access Units 529-285 and 530-240 cross Class I tributaries to Alder Creek and Buster Creek, respectively. However, the Transportation reports contained in the unit cards indicate that suitable alternative alignments may exist which avoid these streams altogether. If so, then they must be used in lieu of the currently proposed alignments, as 11 AAC 95.285(a)(6) requires that stream crossings be minimized. This is especially important for the 64-76-10.1 spur that accesses Unit 529-285. According to Table 3-21 of the EIS (page 3-51), this segment has a high potential for direct sediment delivery to the Class I stream that it crosses. The road card indicates that a large culvert with 10 feet of fill is proposed to complete the crossing. Such an installation with that amount of fill would directly impact water quality and anadromous fish habitat during both installation and removal and should, therefore, be avoided. If the alternative alignment mentioned in the unit card Transportation report is not deemed feasible, then a bridge should be installed rather than a culvert.

### AK-40

**AK-38 and 39** Temporary spur roads and a few specified roads are closed to forest practices standards. Roads are also physically closed by pulling bridges or culverts or constructing barriers to motor vehicles. Some roads remain open for silvicultural work such as thinning or other forest management activities.

Monitoring of roads and road maintenance is accomplished through final road inspections. A monitoring form is prepared, an inspection is made and additional work needed to bring the road to Forest standards is done. The Ketchikan Area also monitors a random selection of roads during the annual interdisciplinary BMP's monitoring trip. Periodic inspections of roads by road maintenance staff, other Forest Service employees, other agency employees and the general public also are used for monitoring. Roads are also monitored after any large scale natural events such as unusually heavy rains.

It is not surprising that isolated problem areas on closed or open roads are found. When such problems are found, reports to the local District Ranger are the most effective method of solving the problem. The road problems mentioned in your letter were not known about in time to include them in the fall 1995 road maintenance contract. As soon as weather allows in the spring, corrective actions on these roads will be taken.

Road 64-76-10.1 which accesses Unit 529-285 is not proposed under Alternative 6. If selected for harvest in subsequent entries, alternative access from the southeast to avoid the Class I crossing will be evaluated.

Unit 530-240 is not proposed under Alternative 6. Access to Unit 530-240 was designed to access timber along Buster Creek between the 20 Road and the small Class I stream which it crosses. This timber was later removed from the suitable timber base and was dropped from the unit. With all of the unit being located south of the Class I stream, it may be economically feasible to access this unit from the 2084010 Road south of the unit. This route should be evaluated if this unit is selected for harvest during subsequent entries.

### AK-40

## Responses to State of Alaska

September 28, 1995

17

Mr. Dave Arrasmith

Table 3-21 of the EIS identifies this road segment as having a high potential for direct sediment delivery to a Class I stream. According to the road card, the alignment will cross a Class I stream contained within "a V-notch 20' deep and 30' wide" and will involve the installation of a large culvert or a bridge. Given the extremely large amount of fill that would be required for a culvert at this site, and the associated impacts that such an installation would have on water quality and anadromous fish habitat, a bridge should be installed to complete the crossing. According to 11 AAC 95.300(a)(7), "in deep V-notches or in drainages where a culvert may require *substantial fill, a bridge is the preferred crossing structure, if feasible.*"

AK-41

AK-41

Unit 530-200 is not proposed under Alternative 6. If selected for future entries, this unit would be evaluated during final layout for helicopter logging, which would eliminate the need for Road 64-77-17. If the road is constructed, the feasibility of a bridge should be considered for the Class I stream crossing during final layout.

DFG ACMP CONSISTENCY ISSUES

In reviewing the proposed timber sale under the Alaska Coastal Management Program (ACMP) standards, the department must use the Alaska Forest Resources and Practices Act (FPA) and Regulations which constitute the ACMP standards for federal timber sales. Exactly how to apply these standards to federal timber sales has been the subject of several meetings between the Forest Service and State of Alaska over past years. The most pertinent standards that the department uses to evaluate whether or not a proposed action is consistent with the ACMP for the management of fish and wildlife resources are summarized below:

## Section 41.17.060 REGULATORY AND ADMINISTRATIVE STANDARDS:

- (b) With respect to state, municipal, and private forest land,
  - (5) significant adverse effects of soil erosion and mass wasting on water quality and fish habitat shall be prevented or minimized;
- (c) With respect to state and municipal forest land only,
  - (1) forest land shall be administered for the multiple use of the renewable and nonrenewable resources and for the sustained yield of the renewable resources of the land in the manner that best provides for the present needs and preserves the future options of the people of the state;
  - (5) there may not be significant impairment of the productivity of the land and water with respect to renewable resources; and
  - (7) allowance shall be made for important fish and wildlife habitat.

## Section 41.17.118 RIPARIAN STANDARDS FOR STATE LAND

- (a) (2) on state forest land managed by the department that is located south of the Alaska Range,
  - (a) harvest of timber may not be undertaken within 100 feet immediately adjacent to an anadromous or high value resident fish water body;



## Responses to State of Alaska

Mr. Dave Arrasmith 18 September 28, 1995

(b) between 100 and 300 feet from the water body, timber harvest may occur but must be consistent with maintenance of important fish and wildlife habitat.

Section 41.17.119 MINIMUM RIPARIAN STANDARDS FOR OTHER PUBLIC LAND. On other public land, the harvest of timber may not occur

(1) within 100 feet from the shore or bank of an anadromous or high value resident fish water body that is located south of the Alaska Range;

Section 41.17.900(b) APPLICABILITY specifies that for federal land,

(1) the degree of resources protection may not be less than that established by this chapter for state land except that AS 41.17.119 establishes the minimum riparian standard;

(2) a timber harvest activity subject to this chapter shall satisfy the requirement to be consistent to the maximum extent practicable with the Alaska Coastal Management Program if the federal land management plans, guidelines, and standards applicable to that timber harvest activity provide no less resource protection than the standards that are established in this chapter provide for state land except that

(A) AS 41.17.119 establishes the minimum riparian standards;

In December, 1993, the State Attorney General carefully analyzed the entire FPA as it related to ACMP reviews of riparian harvest under federal timber sales and concluded:

the riparian zones must be at least 100 feet, and there must also be a determination that within 100-300 feet, the federal requirements for the harvest are at least as restrictive as the state requirement that within 100-300 feet the activity is "consistent with the maintenance of important fish and wildlife habitat." AS 41.178.118 (a)(2)(B).

Log transfer facilities (LTF), floating camps and other project components requiring multiple agency permits are subject to the broader range of ACMP standards, including the Coastal Habitat Standards. The construction of a new LTF on Thorne Island, which could be potentially inconsistent with 6AAC 80.120 of the ACMP, is discussed in detail in the ANILCA Sec. 810 (Subsistence) section of our comments.

AK-42

Project map and detailed plan of operations

Although we know that Alternative 3 is the "preferred alternative" at this time, it is too early in the FS analysis and decision making process for the project to be accurately described for reviewers. It is unclear, for example, if the FS intends to avoid or modify harvest on Thorne Island, as an application packet has not yet been submitted for the review of the proposed LTF. Other decisions, such as reduced fisheries protection/buffers on some Class II streams, or if the Calder-Lab Bay tie-road will be excluded in the Record of Decision (ROD), also appear to be inconclusive. Much information, such as the locations of stream

AK-43

AK-42 Refer to response to AK-1.

AK-43 Alternative 6 of the Final EIS proposes to implement the Uneven-Aged Management Plan on Thorne Island, which will not require construction of a new LTF. The Calder Tie Road is not proposed under Alternative 6. Clarification regarding stream buffers has been provided in the Final EIS, and in response to comment AK-29. Effects of the Rescission Bill are discussed in response to comment AK-2.

In accordance with the CPOW LOA, the USFS will provide, for the selected alternative, unit cards for each unit located in high quality habitat and within 300 feet of an ADF&G cataloged anadromous or high value resident stream. The unit cards will be provided for informational purposes only. For a discussion regarding the level of detail for stream crossings and engineering details of proposed instream activities, please refer to response to comment AK-48.



## Responses to State of Alaska

AK-43

crossings and engineering details of proposed instream activities are still of a preliminary nature. It also appears to be unknown how factors such as the proposed congressional "Recession Bill" might affect unit lay-out, road locations, and the implementation of wildlife retention or some other wildlife habitat protection strategy. This needs to be clarified in the FEIS.

AK-44

Additionally, the project description lacks a good quality map which accurately depicts exactly what will occur as a result of the Lab Bay timber sale.

### Riparian protection

The Lab Bay DEIS is proposing to decrease buffer strip protection for Class II fisheries habitats below the standards previously implemented by the FS. From 1991-1995 it was standard FS policy to apply minimum, 100-foot, no-cut zones to all Class II streams which flowed into Class I habitat, but not Class II streams which flowed directly into salt water. The Lab Bay project has departed from past policies by redefining Class II habitat into newly developed designations; "Class II a" and "Class II b." According to the Lab Bay DEIS, "Class II a" streams flow directly into Class I streams and "Class II b" streams flow into Class II or Class III streams. Under the new Lab Bay policies, "Class II b" streams, even though they may eventually flow into Class I streams and not saltwater, could receive buffers which may be under 100 feet. An example of this can be found in Unit #528-250. Would this practice violate the TTRA? It may provide inadequate protection pursuant to Sec. 41.17.060.(c) 1,5,7; 41.17.118(a)(2)(A); and/or 41.17.119(1). We recommend the FS re-examine this change in policy with respect to the above citations and their own 1995 Anadromous Fish Habitat Assessment (AFHA) Report to Congress. We also request information on the value of the riparian area of these streams for wildlife and resident fish in the final EIS in order to determine if harvesting within 100 feet of them is consistent with the ACMP.

AK-45

The riparian standards pertinent to this sale also require that "between 100 and 300 feet from the water body [anadromous/high value resident fish], timber harvest may occur but must be consistent with maintenance of important fish and wildlife habitat" (Sec. 41.17.118(a)(2)(B)). Consequently, the FS's ACMP consistency finding needs to clearly identify what timber harvest activities will occur within 300 feet of each Class I and II stream and how important fish and wildlife habitats within this zone will be maintained consistent with the standards for state lands. Pursuant to the CPOW LOA, we define high value wildlife habitats within Class I/II riparian areas as follows:

AK-46

For marten, land otter, black bear, wolf, Canada goose, and bald eagles, high value wildlife habitats would be those with an HSI of 0.5 or greater. For deer, the HSI value comparable to the 0.5 used for the other species varies by VCU because the presence of wolves and moderate and high snow ratings limit the highest possible deer HSI values to well below 1.0. For VCUs with wolves and a high snow rating (533.0, 534.0, 534.1, 534.2, 534.3, and 534.4), habitats with a deer HSI value of 0.25 or greater are considered high value. For VCUs with wolves and intermediate snow ratings (529.0, 530.0, 532.0, 535.0, 536.0, 537.1, 538.0, 539.0, 540.0, and 551.0),

AK-44 Refer to response to AK-32.

AK-45 Refer to response to AK-29.

AK-46

The USFS believes that its riparian management standards are equal to or greater than those required by State ACMP standards. The USFS disagrees that 41.17.118(a)(2)(B) applies to Federal land. This provision is a riparian standard for State land which states that "between 100 and 300 feet from the water body, timber harvest may occur but must be consistent with the maintenance of important fish and wildlife habitat." AS 41.17.900(b)(2) states that timber harvest activities on Federal land satisfy consistency requirements if they "provide no less resource protection than the standards that are established in this chapter provide for state land except that (A) AS 41.17.119 establishes the minimum riparian standards...."

USFS standards provide for minimum 100-foot no-harvest buffers on Class I and II streams without exception; State standards provide buffers on ADF&G cataloged streams and allow variances under certain conditions. USFS standards and guidelines provide for extension of no-harvest buffers based on site-specific conditions. Lab Bay units were field-verified by resource specialists, and no-harvest buffers were commonly designated greater than 100 feet from the stream. USFS standards and guidelines also prescribe 'no programmed harvest' and 'selective harvest' buffers totaling up to 500 foot width on specific channel types, including some Class III stream channels. In addition, USFS standards and guidelines provide for 'no programmed harvest' buffers for all stream classes located within 500 feet and 1,000 feet of Beach Fringe and Estuary habitats, respectively. Thus, a very high level of protection is afforded streams and adjacent riparian habitat within these high value Beach Fringe and Estuary habitats. The USFS believes that the basic standards and guidelines for protection of fisheries and wildlife habitats, in combination with field designation of buffer extensions, specification of full and/or partial suspension for protection of water quality, and designation of snag and green tree leave areas, provides protection for an equal or greater number of acres of high quality habitat than is provided by State ACMP standards alone.

## Responses to State of Alaska

Mr. Dave Arrasmith 20 September 28, 1995

habitats with a deer HSI value of 0.32 or greater are considered high value. For VCUUs with wolves and low snow ratings (527.0, 528.0, 528.1, 531.1, and 531.3), habitats with a deer HSI value of 0.45 or greater are considered high value.

AK-46

AK-47 [ When the unit cards are finalized for this sale, they need to accurately show where the FS will protect high value habitats between 100 and 300 feet within riparian zones.

Stream crossings in fish habitat

The information provided in the DEIS regarding the locations and activities associated with road construction at stream crossings and other instream activities is too vague for us to be able to complete a consistency finding. Additionally, the information supplied lacks coherency and some of it is conflicting within various portions of the EIS. An example of conflicting fish stream crossing information within the preferred alternative of the DEIS can be seen by comparing the Class II crossing information in Vol. 1, page 3-89, with Vol. II, page H-51. According to Volume 1, a total of 13 Class II streams are crossed by new and reconstructed roads. The road card, however, in Volume II for Road #65-79-13, which accesses only 3 units, states that there are 22 Class II stream crossings on this one road alone. There is no map in either volume, however, showing any Class II stream crossings in this area. In addition to inexact or inaccurate stream crossing locations, the EIS also typically lacks a clear description of instream activities, stream crossing structures, on-site stream characteristics, and specific mitigation measures. To complete our ACMP and permitting reviews, we need to have the following pertinent information in the ROD:

AK-48

- A. Exact locations of fish stream crossings and instream activities.
  1. A detailed map at the 1"/mile scale showing all crossing locations and timing and location of instream activities, including equipment fords.
  2. Detailed sketches of each site depicting the specific structure and activity proposed at cataloged anadromous streams.
  3. Station numbers to uniquely identify each structure.
- B. Stream crossing structures.
  1. Design or type of crossing structure.
  2. Size of bridge or culvert (lengths of bridge/CMP and diameter of CMPs).
  3. Placement of bridge abutments in relation to streambanks.
  4. Gradients of culvert placements and peak flow analysis documenting fish passage standard will be met.
  5. Special considerations such as instream pier placements, baffling of CMPs, etc.
- C. On-site stream characteristics.
  1. Width, depth, and gradient of streams.
  2. Fish species present.

AK-46  
(Cont.)

In accordance with the CPOW LOA, the USFS will provide, for the selected alternative, unit cards for each unit located in high quality habitat and within 300 feet of an ADF&G cataloged anadromous or high value resident stream. The unit cards will be provided for informational purposes only.

AK-47

In accordance with the CPOW LOA, the USFS will provide, prior to release, the unit card for any unit located in high quality habitat and within 300 feet of an ADF&G cataloged anadromous or high value resident stream. The unit cards will be provided for informational purposes only.

AK-48

A 1":1 mile map showing the locations of all Class I and Class II stream crossings is available in the Project Planning Record. The Road Card for Road # 65-79-13 has been revised to show the correct number of Class III stream crossings/cross drainage sites that will require culvert placement. The road has been modified due to a change in the prescription for Unit 535-209 to helicopter harvest. No Class I or II streams are crossed by this proposed road alignment.

The Project has been determined by the USFS to be consistent with the ACMP. The State of Alaska agreed with this determination in its letter dated May 22, 1996.



## Responses to State of Alaska

Mr. Dave Arrasmith 21 September 28, 1995

3. Description of aquatic habitat. Does fish usage include spawning, rearing and/or migration?

D. Mitigation measures proposed at each site.

1. What timing windows for instream work will be implemented?
2. Describe other specialized mitigation measures that may be implemented during or after installation (e.g. fluming, diversions, etc.).

AK-48

This information, along with having these stream crossings staked in the field, would also allow us to conduct field reviews in a timely manner to resolve questions.

### Road Maintenance and Fish and Wildlife Habitat

The issue of road maintenance and/or closures has not been adequately addressed in relation to either fish or wildlife concerns. Road closures are generally beneficial to wildlife species which could be susceptible to population declines as a result of roading (e.g. wolves, marten, bear, etc.). Roadbed erosion, fish passage blocks, and related fisheries habitat concerns are other important reasons to adequately put "roads to bed" if these roads are not regularly maintained.

In order to find the road maintenance plans consistent, the state needs to know:

AK-49

- A. Which BMPs will be followed?
- B. Will all fish habitat drainage structures be removed?
- C. Will the residual fish stream crossings be designed for use by ATVs?
- D. Will roads be sloped outward?
- E. What is the frequency and design of water bars?
- F. Which culverts will be left in the streams? If any, will the roads be trenched immediately adjacent to the culverts to ensure relief drainage if the culverts plug?

To be consistent with 11 AAC 95.315 and 95.320, the FS must commit to implement a road management/closure action plan. All roads which are not inspected and maintained on an annual basis should be effectively closed and put-to-bed along guidelines consistent with 11 AAC 95.320. Additionally, the closure of roads by "organic encroachment" is not an effective method to implement road closures for Maintenance Level 1. All such roads should use other means to implement effective blockages.

### GENERAL ADVISORIES

AK-50 The State Department of Natural Resources has reviewed the "Unit Plan and Layout Cards" and "Phase I road Cards" and wishes to advise you that a State of Alaska authorization may be required to access or effectively log the harvest the following four units:

AK-49 A road access management plan has been developed for the Lab Bay Project area as part of the EIS. Most of the roads constructed for the project would be closed at the end of logging operations according to access management direction provided on road cards. In addition, several miles of roads that are currently open would also be physically closed according to access management objectives, after issuance of the Record of Decision and subject to available funding and work schedule. Roads will be closed primarily by physical means such as pulling bridges or culverts or constructing barriers to motor vehicles.

The Lab Bay road cards note the roads proposed for closure and the reasons why. Closure points were selected in proximity to natural features such as stream crossings, to facilitate implementation. Implementation of the road closure plan will occur upon completion of the Lab Bay sale, and will be conducted by District personnel.

Monitoring of roads and road maintenance is accomplished through final road inspections. A monitoring form is prepared, an inspection is made, and additional work needed to bring the road to Forest standards is performed. The Ketchikan Area also monitors a random selection of roads during the annual interdisciplinary BMP's monitoring trip. Periodic inspections of roads by road maintenance staff, other Forest Service employees, other agency employees, and the general public also are used for monitoring. Roads are also monitored after any large scale natural events such as unusually heavy rains.



## Responses to State of Alaska

AK-50

Mr. Dave Arrasmith 22 September 28, 1995

Unit 538-208 Actual layout of this unit may entail the use of stet rigging and tailhold trees. A land use permit may be required.

Unit 538-210 & 221 It appears that a small portion of the proposed access road to these units crosses state land. If this is the case a public easement will be required from the State.

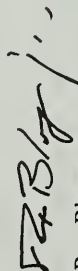
Unit 540-223 A section of the proposed access road crosses state land and will require a public easement from the state.

AK-50

Units 538-298 & 538-210 border on State land. The DNR recommends that a 100 foot border be prescribed for harvest units which border State Land. DNR makes this request in order to protect the state's resources from the effects of the common windthrow/blowdown problems associated with timber sales in this area.

Thank you for the opportunity for the State to comment on this NEPA document. If you have any questions please contact me at 465-8791 (or general office number 465-3562).

Sincerely,



Rex Blazer  
Project Review Coordinator

cc: Carl Ohls, DCED, Juneau  
Jim Ferguson, DEC, Juneau  
Lana Shea, DFG, Juneau  
Jack Gustafson, DFG, Ketchikan  
Tom Paul, DFG, Juneau  
Jim McAllister, DNR/Forestry, Juneau  
Bill Ballard, DOT/PF, Juneau  
Mike McKinnon, DOT/PF, Juneau  
Elizaveta Shadura, DNR, Juneau  
Bill Garry, DNR/DPOR, Juneau  
Judith Bitner, DNR/SHPO, Anchorage  
The Honorable Pat Rowland, Mayor, Coffman Cove  
Warren F. Powers, District Contact, Point Baker  
Roman Keleske, Chairman of the Board, Port Protection  
Ginny Tierney, District Contact, Thorne Bay  
Craig Templen, District Contact, Whale Pass  
The Honorable Randy Claassen, Mayor, Thorne Bay  
Rick Harris, Sealaska Corporation, Juneau  
Buck Lindekugel, SEACC, Juneau  
Ron Wolfe, Klukwan Inc., Juneau

The Forest Service recognizes that permits for lift trees or other logging requirements and/or easements may be required for proposed actions which impinge upon State land. Based on the units and roads included in the ROD for this Project, land use permit and easement applications will be prepared using layout-level information. Units within 1,000 feet of State land are identified in the Land Use Section of the Draft EIS and Final EIS.

The Forest Service recognizes its responsibility to protect the values of private lands adjacent to National Forest System Lands. During final layout of individual units, potential for effects to adjacent lands will be evaluated. Protection measures will be implemented as appropriate based on site-specific conditions, and may include features such as selective harvest buffers, no-harvest buffers, and 'feathering' of unit boundaries.

Alternative 6 of Final EIS proposes to defer harvest from many of the units located in close proximity to private lands.



## United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
1889 C Street, Room 119  
Anchorage, Alaska 99501-5128

ER 95-557

Mr. Robert L. Vaught  
Forest Supervisor  
Ketchikan Area  
Tongass National Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan, Alaska 99901

SEP 27 1995

Dear Mr. Vaught:

In response to your request of June 25, 1995, we have reviewed the August 1995, U.S. Forest Service Draft Environmental Impact Statement (DEIS) for the proposed Lab Bay Timber Harvest, Tongass National Forest. We offer the following comments for your consideration in preparation of the Final Environmental Impact Statement (FEIS).

### GENERAL COMMENTS

The Forest Service, Fish and Wildlife Service (FWS), and Alaska Department of Fish and Game are cooperating to prepare conservation assessments for the Queen Charlotte goshawk, Alexander Archipelago wolf, and the marbled murrelet through the December 1994, Memorandum of Understanding. The long-term land management requirements of these and other old-growth dependent species are also being addressed through revision of the Tongass Land Management Plan (TLMMP). As recently as June 1995, the FWS found that listing the Queen Charlotte goshawk as endangered and Alexander Archipelago wolf as threatened pursuant to the Endangered Species Act was not warranted primarily because of these ongoing conservation efforts. The FWS pledges its continued support of and participation in these endeavors.

DOI-1

The July 27, 1995, Rescission Bill, P.L. 104-19, which expires on September 30, 1995, states that "no funds available to the USFS may be used to implement Habitat Conservation Areas in the Tongass National Forest for species which have not been declared threatened or endangered pursuant to the Endangered Species Act, except that with respect to goshawks the USFS may impose interim goshawk HCAs not to exceed 300 acres per active nest..."

## Responses to Department of the Interior

DOI-1

The Final EIS incorporates federal legislation in effect at the time of Final EIS preparation. The 1995 Rescission Act does not affect 1996 Forest Service timber sale planning. Legislation that is passed subsequent to publication of the Final EIS and the ROD would be addressed during final layout and sale implementation.

## Responses to Department of the Interior

### DOI-2

A conservation assessment for the goshawk has been completed by an interagency group. Information from this assessment has been incorporated into the Final EIS. Each alternative proposed in the Final EIS incorporates a strategy to maintain old growth habitat. Each strategy protects old growth to a different level, yet each provides protection for an equal or greater number of acres than the 1979 TLMP retention plan. Alternatives 3, 4, and 6 minimize fragmentation and road construction within large, contiguous blocks of old growth and Alternatives 4 and 6 would maintain corridors between these blocks. The proposed strategies allow the Forest Service to maintain options for future decisions regarding size, spacing, and location of old growth retention areas. Alternative 6 is consistent with the old growth strategy proposed in the 1996 TLMP Draft Revision preferred alternative.

### DOI-3

Conservation assessments have been completed by an interagency group on the goshawk, wolf, and marbled murrelet to determine the level of risk under different management scenarios. These assessments will be used, along with other assessments and analyses, in the revision of the TLMP. In the interim, we have incorporated information from the assessments into the Final EIS and under Alternative 6 are maintaining the large, contiguous blocks to the extent possible.

DOI-4 Your comment offering to assist is noted.

DOI-5 Refer to response to AK-32.

Several timber sale proposals, including the Lab Bay Sale, are currently at various stages in the National Environmental Policy Act (NEPA) process and may be subject to the Rescission Bill provisions. Collectively, these sales are expected to have adverse effects on habitat for the goshawk, wolf, and other old-growth forest associated species by removing old-growth forest and fragmenting large old-growth blocks. Remaining old-growth blocks are critical for maintaining viable, well-distributed populations of wildlife across the forest landscape and precluding the need to list species under the Endangered Species Act. As previously stated, there are ongoing, cooperative interagency efforts to gather more information on goshawks and wolves, as well as their habitat requirements throughout the Tongass National Forest. The FWS is concerned that Rescission Bill provisions may be carried over into Fiscal Year 1996 and will affect all Tongass project planning during that time.

The FWS does not know of any scientific biological information to support the goshawk provisions in the Rescission Bill. Although more information is needed to determine the specific effects of past timber harvest, to determine habitat associations that directly influence goshawk survival, and to prescribe future management that assures viability of species, information currently available suggests that large blocks of old-growth forest are preferred by goshawks. The FWS recommends that a conservative habitat management approach be taken to maintain the options required to conserve this species. The FWS remains highly concerned about the status of the Queen Charlotte goshawk.

In order to address the full extent of effects from the Rescission Bill, FWS suggests that cumulative impact analyses be conducted for goshawks and wolves prior to identification of a selected alternative for this sale. FWS believes that these cumulative impact assessments should be conducted at the landscape level to address losses of habitats and at the site-specific level to address loss of nest sites throughout the Prince of Wales Island area. The cumulative impact analyses should address all projects and impacts authorized under the Rescission Bill. Subsequent NEPA documents for the Lab Bay Timber Sale and other sales located on Prince of Wales Island area should be completed showing the effects of these new directions, particularly if the Rescission Bill is carried over into Fiscal Year 1996.

We appreciate the dilemma the Forest Service faces in planning management activities given the uncertain legislative climate. We assume that corrections will be made to this document and subsequent EISs as more information is obtained. The FWS is willing to assist the Forest Service in their planning effort, to the limit that budget and staff will allow.

### Maps

We suggest that quality of the maps in the DEIS be improved. Alternative maps are too small a scale to adequately show what areas will be affected by the proposed timber sale activities. We suggest that the maps show contour lines, names of landmarks, and existing roads that are referred to throughout the document.



## Responses to Department of the Interior

DOI-5

We believe that maps should also show the extent of logging that has occurred on private/non-federal lands so that the general public can review Forest Service proposed harvest areas in relationship to past old-growth harvest areas.

DOI-6

The Lab Bay Project Area map depicts a portion of Harvest Unit #213 extending into the Mt. Calder/Mt. Holbrook (KO3a) LUD II. We suggest that this map be corrected or this unit moved out of the LUD II area.

### Field Inventories

DOI-7

The DEIS states that field inventories for wildlife were conducted in 1992. However, it does not indicate the type of survey methodologies employed, the percentage of units covered, or the frequency and time of year such surveys were performed. We suggest that the survey information be in sufficient detail to allow a thorough evaluation of the impact of the proposed project on those species that utilize the area. We believe that discussions of sampling methodologies and disclosure of any variations from the methodologies should be included in the FEIS. We suggest that the discussion also include sampling dates, times, and any other factors that may have influenced the results of sampling. We suggest that maps be included that identify the location of all pedestrian transects, traps grids, herpetology arrays, or other sampling plots used to determine the on-site status of species.

DOI-8

We suggest that the Forest Service use the latest available scientific information to update the statistical models and employ this analysis in the FEIS.

### Old-Growth Retention

DOI-9

The 1979 TLMP (as amended in 1986) requires retention areas to be managed to "maintain the uneven-age structure of old growth habitat components required to maintain related population levels of dependent wildlife and fish species." These retention areas are critical in conserving old-growth habitat in the event Habitat Conservation Areas (HCA) are not included in the selected alternatives. We believe that the FEIS should include a map with all old-growth retention blocks identified for selected alternatives.

DOI-10

We support establishing linkages to old-growth forest habitat by means of travel corridors to aid dispersal of species. However, we do not believe that travel corridors associated with roads and second growth meet the Viable Population Committee criteria.

DOI-11

The five travel corridors proposed in the DEIS would be harvested on a 195-year rotation schedule. Based on information in the scientific literature, old growth characteristics would not be attained until 250+ years. In order to maintain some structural characteristics of old growth to ensure wildlife dispersal, a longer rotation schedule would be expected. We suggest that the FEIS explain the rationale for using 195 year rotation schedule.

DOI-6

Potential harvest unit 531.1-213 is located immediately adjacent to the boundary of the Mt. Calder/Holbrook LUD II (VCU's 531.3). As noted in the Unit Design Card, final layout of this unit will be dependent upon survey of the LUD II boundary and the unit will be located entirely outside of the LUD II. The unit and VCU boundaries depicted on the Project Area map are approximate until survey and final layout data are available.

DOI-7

Sampling methodologies are discussed in the resource report. This level of detail would not be appropriate for inclusion in the EIS. Copies of the resource report and unit data forms can be obtained from the Ketchikan Area office.

DOI-8

The Habitat Capability Models are used on a comparative basis, not as absolute values. Therefore we feel that the data provided is sufficient for this analysis. The Final EIS incorporates results of the updated deer Habitat Capability Model (Appendix P).

DOI-9

For the 1984-89 KPC operating period, old-growth retention and extended rotation areas were tentatively identified by the Forest Service and ADF&G. In the Lab Bay Project Area, 18,035 acres of retention and 12,259 acres of extended rotation were selected but were never formally mapped for inclusion in the Forest Plan. Approximately 600 acres of the tentatively identified retention areas were harvested under the 1989-94 sale. The old-growth retention strategies proposed for the project (LUD system, Project-designated strategy) would meet or exceed the 1979 TLMP, as amended. The large-scale Project Area map accompanying the Final EIS displays the old growth retention strategy for the ROD alternative.

DOI-10

Pgs. 37 through 40 of the VPOP Report (1993) outline the objectives of designating travel corridors in a Habitat Conservation Strategy. These objectives were followed for the design and location of the Lab Bay Project-designated travel corridors under Alternatives 4 and 6. Roads and some harvest are proposed within the Project-designated travel corridors (Alternatives 4 and 6) since adequate forage and hiding habitat would still remain within them for wildlife species to successfully move from one large area of reproductive habitat to another.

## Responses to Department of the Interior

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We believe that maps should also show the extent of logging that has occurred on private/non-federal lands so that the general public can review Forest Service proposed harvest areas in relationship to past old-growth harvest areas.

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DOI-11

The five travel corridors proposed in the DEIS would be harvested on a 195-year rotation schedule. Based on information in the scientific literature, old growth characteristics would not be attained until 250+ years. In order to maintain some structural characteristics of old growth to ensure wildlife dispersal, a longer rotation schedule would be expected. We suggest that the FEIS explain the rationale for using 195 year rotation schedule.

DOI-11

The proposed management of travel corridors under Alternatives 4 and 6 (195-year harvest rotation) is based, in part, on the definition of corridors presented in FEMAT, which states "A defined tract of land, usually linear, through which a species must travel to reach habitat suitable for reproduction and other life-sustaining needs." Under Alternatives 4 and 6, limitations on harvest unit size and road construction, in conjunction with structure retained during timber harvest, would provide adequate foraging habitat and cover to allow wildlife species to travel between Project-designated old-growth blocks. This rationale has been incorporated into the Wildlife, Old Growth, & Biodiversity section of the Final EIS.



## Fisheries

## Responses to Department of the Interior

A recent report to Congress (*Anadromous Fish Habitat Assessment*, January 1995) concluded that the Best Management Practices (BMP) currently employed across the Tongass National Forest were inconsistently applied and failed to adequately protect fish habitat. The report identified that a more conservative approach to protect fish habitat should be taken.

## DOI-12

We believe that the primary effect of all the Lab Bay alternatives on fish habitat will be increased erosion and sedimentation as a result of timber harvest and road construction on slopes with high potential for delivery of sediments to Class I streams (page 3-49). Increased sedimentation has a direct negative affect on developing salmonid embryos and juvenile salmonid survival. We believe that the FEIS needs to more adequately address the potential for direct delivery of sediments to Class II and III streams. We suggest that the Forest Service increase monitoring of logging and road construction and evaluate the implementation and effectiveness of the BMPs used to protect fish habitat. We further suggest that Class II and III streams (headwaters) need additional buffers to prevent loss of stabilizing large woody debris and changes in energy sources and nutrients that can degrade downstream fish habitat. We also believe that optimizing buffer widths on vulnerable streams will help to reduce sedimentation and blow downs by high winds.

## DOI-13

The National Forest Management Act (NFMA) states that management activities that have serious and adverse effect to fish habitat shall not be permitted. The Tongass Timber Reform Act (TTTRA) provides direction for fish protection in section 103(a). We suggest that the FEIS identify what method of monitoring will be used to ensure compliance with NFMA and TTTRA, the frequency of inspections, and percentage of unit inspected. We also suggest that a cumulative analysis of past and current fish habitat losses within Polk Inlet, Central Prince of Wales, Control Lake, and Lab Bay timber sales be included.

## DOI-14

The DEIS refers to Class IIa and IIb streams. Section 103(e) of the TTTRA states "...a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into Class I streams...." TTTRA does not define Class IIa or IIb streams. We suggest that the FEIS define Class IIa and IIb streams and specify measures taken to comply with TTTRA.

## DOI-15

## Wetlands

The Lab Bay Project Area contains approximately 97,506 acres of wetlands. Forested wetlands comprise about 23,104 acres. Since 1954, trees on approximately 9,750 acres of forested wetlands have been harvested and approximately 11,065 wetland acres would be affected by proposed Lab Bay timber sale and road construction. We suggest that the FEIS include information to support the belief that forested wetlands prescribed for harvest are capable of regenerating on a sustainable yield basis. We suggest that the analyses also demonstrate the rate of regrowth expected on hydric soils.

## DOI-16

4

The Lab Bay project is consistent with the recommendations applicable to project-level planning presented in the Anadromous Fish Habitat Assessment (AFHA) of January 1995. During field investigations, areas with steep slopes, high hazard soils, and Class III streams were identified and evaluated for risk of adverse impacts on headwater channels. BMP's listed on the individual unit and road cards were prescribed to reduce the risk of onsite erosion and delivery of sediment to a stream channel. Several areas with a very high risk of mass movement were identified and recommended for removal from the suitable timber base. These are described in Appendix A of the Soil and Water Resource Report (Metzler 1993).

Another recommendation of the AFHA is identification of site-specific stream-side buffers along floodplains and confined alluvial channels. Harvest units located adjacent to Class I and II stream channels were investigated by project hydrologists or fisheries biologists to determine the extent and type of buffer necessary to assure protection of any small, off-channel streams associated with floodplains and to provide a long term source of woody debris. These buffers are described on the individual unit cards (Planning Record).

In order to minimize onsite erosion and sediment delivery to stream channels, BMP's have been developed for each proposed harvest unit and road location. These are described on the individual unit and road cards. We share the concern that increased sedimentation has a negative effect on developing salmon embryos and juvenile salmonid survival. An extensive field effort was undertaken for the Lab Bay Project in order to develop site-specific measures to minimize the risk of stream sedimentation.

The Final EIS includes an expanded discussion of direct delivery of sediments to Class II and III streams and BMP's to minimize erosion and sedimentation.

Also see response to SEACC-28.

## DOI-13

Refer to Response to AK-28 for a discussion of monitoring. Implementation and effectiveness of BMP's, TTTRA stream buffers and other protective strategies will be addressed through the Ketchikan Area Monitoring Strategy.



## Responses to Department of the Interior

## Fisheries

A recent report to Congress (*Anadromous Fish Habitat Assessment*, January 1995) concluded that the Best Management Practices (BMP) currently employed across the Tongass National Forest were inconsistently applied and failed to adequately protect fish habitat. The report identified that a more conservative approach to protect fish habitat should be taken.

We believe that the primary effect of all the Lab Bay alternatives on fish habitat will be increased erosion and sedimentation as a result of timber harvest and road construction on slopes with high potential for delivery of sediments to Class I streams (page 3-49). Increased sedimentation has a direct negative affect on developing salmonid embryos and juvenile salmonid survival. We believe that the FEIS needs to more adequately address the potential for direct delivery of sediments to Class II and III streams. We suggest that the Forest Service increase monitoring of logging and road construction and evaluate the implementation and effectiveness of the BMPs used to protect fish habitat. We further suggest that Class II and III streams (headwaters) need additional buffers to prevent loss of stabilizing large woody debris and changes in energy sources and nutrients that can degrade downstream fish habitat. We also believe that optimizing buffer widths on vulnerable streams will help to reduce sedimentation and blow downs by high winds.

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The DEIS refers to Class IIa and IIb streams. Section 103(e) of the TTTRA states "...a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into Class I streams...." TTTRA does not define Class IIa or IIb streams. We suggest that the FEIS define Class IIa and IIb streams and specify measures taken to comply with TTTRA.

## Wetlands

The Lab Bay Project Area contains approximately 97,506 acres of wetlands. Forested wetlands comprise about 23,104 acres. Since 1954, trees on approximately 9,750 acres of forested wetlands have been harvested and approximately 11,065 wetland acres would be affected by proposed Lab Bay timber sale and road construction. We suggest that the FEIS include information to support the belief that forested wetlands prescribed for harvest are capable of regenerating on a sustainable yield basis. We suggest that the analyses also demonstrate the rate of regrowth expected on hydric soils.

DOI-13  
(Cont.)

Your comment regarding increased size of buffers on Class II and III streams is noted. Site-specific stream-side buffers are described in the unit cards (Planning Record).

Also refer to responses to AK-34 and AK-35 regarding windfirmness of buffers.

## DOI-14

Refer to Response to AK-28. Project specific monitoring, Forest-wide monitoring, and the Ketchikan Area Monitoring Strategy are discussed in Chapter 2 of the Final EIS.

Conducting a cumulative effects analysis of past and current fish habitat losses of the Polk Inlet, Central Prince of Wales, Control Lake, and Lab Bay timber sales is beyond the scope of this EIS. Forest-wide cumulative effects analyses in the TLMP revision EIS documents are incorporated by reference in this EIS. Results of Habitat Capability modelling for these individual project EIS's show no significant adverse cumulative effects to fisheries.

## DOI-15

Refer to Response to AK-29.

## DOI-16

The TLMP planning team established a committee to review the issue of determining whether forested wetlands are suitable for timber harvest. The committee concluded that timber harvest of forested wetlands is within legal requirements. It is also their opinion that while the productivity and response information is limited, it is sufficient to retain these soils in the tentatively suitable land base. As part of their findings, the committee also recommends gathering additional growth and yield information on soil types where data is limited, and using a 250-year rotation to calculate yields on these sites. Regeneration will be certified on all wetland area harvested.

## Responses to Department of the Interior

### DOI-17

During road construction some excavation of wetland overburden is required. We suggest that the direct and cumulative impacts associated with disposal of this material be discussed in the FEIS. We also suggest that the total cubic yards removed and methods for disposing of the material be included in the FEIS.

### DOI-18

Degradation of wetlands caused by heavy equipment impacting vegetation, impairment of natural drainage patterns, loss of nesting and foraging habitat for migratory birds and other species are of concern. These alterations can result in permanent hydrologic change and, in some cases, loss of functional wetland characteristics. We suggest that the FEIS address Lab Bay timber sale's cumulative impact on wetlands and how it meets the goals of Executive Order 11990, as amended, to avoid to the extent possible the long- and short-term adverse impacts associated with destruction or modification of wetlands.

### DOI-19

Another concern is the change of hydrology and its effect on karst landscape. In areas altered by road construction, sheetflow may be disrupted and/or concentrated in locations previously not subjected to inundation. Since muskegs and bogs are acidic, increased inundation may result in increased erosion of the calcium carbonate (limestone). This, in turn, could impact water quality due to increased sink hole formations, cause road failures due to increased sink activity, and impact fragile cave resources. Conversely, limestone structures that are supported by subterranean hydrology can be affected by altered or reduced support, increasing the possibility of surface collapse. We believe that the potential to adversely affect this fragile landscape is high because the knowledge of karst landscape and its interactions on Prince of Wales Island is in its infancy. We suggest that obtaining a better understanding of the functions of the karst systems take precedence over cutting any units located on such a sensitive landscape. We believe that the FEIS should disclose how the vulnerability rating strategy was determined and how effectively this strategy protects fragile karst resources. We also suggest that the FEIS identify a contingency plan to ensure protection of this sensitive habitat.

#### Log Transfer Facility Sites

The amount of potential bark accumulation and attendant biological effects on the marine environment at the Whale Pass, Lab Bay, and Calder Bay Log Transfer Facility (LTF) sites are of concern. Whale Pass LTF (constructed in 1964) has received approximately 750 million board feet (MMBF); Calder Bay (1974) has received approximately 120 MMBF; and Lab Bay (1975) has received approximately 500 MMBF. We believe that the FEIS should address existing bark depth at the three sites, and it identify what mitigation measures would be implemented if bark accumulation is found to exceed the Alaska Timber Task Force guidelines' depth requirements. We suggest that monitoring of bark accumulation be implemented and permanent transects established prior to operation.

### DOI-20

### DOI-17

The excavation of wetland overburden during road construction is only required in situations where the wetland occurs on side slopes greater than 30 percent. Most wetlands crossed by proposed roads in the Lab Bay Project Area are on slopes less than 15 percent. On the gentle slopes, roads are constructed using a rock fill on top of the wetland and providing cross drainage under the roadbed. On side slopes that require the excavation of overburden this material is deposited within the existing road right of way if it is stable, or to an approved disposal site.

### DOI-18

The Floodplains, Riparian Areas, and Wetlands section of the EIS describes the methods used to avoid impacts to wetlands, mitigation measures and BMP's used to protect wetland values, and cumulative effects of timber harvest on wetland habitats.

### DOI-19

Alternatives 3 and 6 of the Final EIS emphasize protection of high vulnerability karst resources by avoiding placement of units and roads on areas mapped as high vulnerability. The 1996 TLMP Draft Revision addresses the protection of karst resources Forest-wide. Alternative 6 is consistent with the direction in the 1996 TLMP Draft Revision.

The EIS presents a summary of developments leading up to implementation of the vulnerability rating strategy, and it provides the references for the Phase 1 and Phase 2 studies. These references document the development, construction, and implementation of the karst vulnerability assessments. The rating strategy is a planning tool, wherein karst areas are classified as high, medium, or low vulnerability to the effects of management. The Draft Standards and Guidelines propose exclusion of timber management activities on high vulnerability karstlands, and provide guidelines to mitigate adverse effects in areas proximal to vulnerable karst features. These protection measures are applied on a case by case basis to karst features identified in proposed logging units and road locations in the Lab Bay Project Area.

### DOI-20

The Lab Bay, Calder Bay, and Whale Pass LTF's were constructed prior to the development of the Alaska Timber Task Force guidelines and the issuing of NPDES permits for individual LTF's. These sites are covered by a general NPDES permit for older LTF's in the Ketchikan Area. The NPDES permit expires on September 9, 1997 and contains no requirements for monitoring bark accumulations. New LTF's are issued individual NPDES permits that may contain monitoring requirements for each site. The Forest Service has not conducted monitoring of bark



## Responses to Department of the Interior

accumulations at these sites, but expects that it will be necessary when new permits are issued. A dive will be conducted prior to the LTF site becoming active, each year during use, and once again after the LTF becomes inactive. Alternative methods of log transfer are not discussed in the EIS since there are existing permits for the operation of the Lab Bay, Calder Bay, and the Whale Pass LTF.

DOI-20  
(Cont.)

During road construction some excavation of wetland overburden is required. We suggest that the direct and cumulative impacts associated with disposal of this material be discussed in the FEIS. We also suggest that the total cubic yards removed and methods for disposing of the material be included in the FEIS.

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DOI-20



**DOI-20** We suggest that underwater surveys be conducted at each existing LTF site. If excessive bark accumulation is documented, alternative methods of log transfer should be used (e.g., barging). We suggest that the dive reports and alternative methods discussion be included in the FEIS.

**DOI-21** The DEIS implies that the three LTF sites have National Pollutant Discharge Elimination System (NPDES) permits. NPDES monitoring reports require various parameters to be documented and submitted to the Environmental Protection Agency. We suggest that monitoring reports for the existing sites be included in the FEIS.

**DOI-22** Additional impacts associated with LTF sites relate to improper disposal of solid waste materials, such as discarded machinery, pipes, rolls of cables, oil drums, metal chairs, bottles, plastic, netting, and other items. We believe that disposal of this type has a direct affect on marine mammals and other aquatic life. We suggest that appropriate mitigation, along with effective enforcement measures to eliminate such improper disposal, be discussed in the FEIS.

**DOI-23** LTFs are usually located at the mouth of estuaries where protection from inclement weather conditions can be provided. Aquatic vegetation (i.e., seagrasses) occurring within the tidal and subtidal zones of estuaries are important to a variety of aquatic species. For example, eelgrass beds are important for providing primary production, shelter, temperature regulation, and food for invertebrates, fish, marine mammals, and waterfowl, and sediment consolidation in subtidal estuarine systems. Eelgrass, identified as a special aquatic resource under the Clean Water Act, can be significantly degraded by bark accumulation and shading from log rafts. We suggest that the FEIS address the direct, indirect, and cumulative impacts of bark and other solid waste materials on this aquatic resource and the potential effective on commercial and subsistence-valued resources.

#### Goshawk

**DOI-24** The DEIS (Page 3-202) acknowledges that the populations of the goshawk and marbled murrelet may experience significant long-term cumulative effects as a result of multiple entries to remove timber within the project area. The DEIS states that the 1994 Forest Service Draft Interim Habitat Management Guidelines will be used to manage habitat for any goshawk nests found in the Lab Bay project area. These guidelines require maintenance of a 30 acre forested area around each goshawk nest, with various levels of habitat alterations allowed within a 600 acre post fledging and a 5,000-8,000 acre foraging area. Recent studies have indicated that the mean home range for goshawks is 5,000-6,000 hectares (12,355-14,826 acres). The breeding season use areas for 5 male goshawks in southeast Alaska varied from 539 to 10,378 hectares (1,332-25,645 acres). Goshawks have been found to prefer old-growth forest and avoid clearcuts and other non-forested habitat. We believe that the FEIS should reflect these findings by presenting options to manage for goshawk habitat in the project area. Larger areas of old-growth forest around goshawk nests during this and future timber sales in the Lab Bay area may preclude the need to list the goshawk under the Endangered Species Act.

## Responses to Department of the Interior

### DOI-21

A Pollution Prevention Plan has been established for the LTF's in the Ketchikan Area. The operation of the Lab Bay, Calder Bay, and Whale Pass LTF's are operated under the guide of this plan. The Environmental Protection Agency (EPA) also requires that the operators of these sites maintain a daily log of observations of pollution discharged into the water around the LTF. The observation log requires the identification of the size and possible source of the discharge, along with other parameters as required by the EPA. The observation logs are submitted to the EPA for their review. See also Response to DOI-20.

### DOI-22

The Forest Service no longer permits the disposal of any solid waste on Forest Service lands. This restriction even covers the disposal of ash produced from the burning of solid waste at an LTF site. Solid waste that is produced at an LTF site must be removed to an approved solid waste disposal site.

### DOI-23

The current Alaska Timber Task Force guidelines for siting LTF's do not permit the placement of LTF's in areas that contain sensitive habitats, such as eelgrass. The three LTF's within the Lab Bay Project Area were constructed prior to the development of the Alaska Timber Task Force siting guidelines. Under Alternatives 4 and 6, no new LTF's would be constructed. See also DOI-20.

### DOI-24

Home range size and habitat preferences of radio-tagged goshawks in Southeast Alaska are discussed under the Affected Environment of the TES section. In addition, information discussed in the review draft goshawk conservation assessment (Hayward et al. 1995) has been incorporated into the Final EIS. Options for maintenance of old-growth habitat are presented under the proposed alternatives. Alternatives 3, 4, and 6 would maintain large blocks of old-growth habitat suitable for goshawks. Individual goshawk nests will be managed under the guidelines current at the time of project implementation. Refer also to the Biological Assessment and Biological Evaluation in Appendix N of the Final EIS.

## Responses to Department of the Interior

### Marbled Murrelet

The DEIS states that murrelet surveys, conducted on Control Lake project area, documented presence in 96 percent of the stands surveyed and concluded that murrelet use of the Lab Bay Project Area to be the same. It is not clear if a marbled murrelet survey was conducted in the Lab Bay project area. We believe that the FEIS should identify what further investigations will be conducted and what actions will be implemented to conserve marbled murrelet habitat and nesting sites. We suggest that the FEIS identify that a landscape management plan be developed that will include monitoring and retention of large tracts of mature, old growth forest with suitable branch structures to support murrelet nests. In addition, we believe that studies should be conducted on habitat requirements on a project-wide and forest-wide scale.

DOI-25

### Alexander Archipelago Wolf

A 12-month "not warranted finding" for the Alexander Archipelago wolf was published in the *Federal Register* on February 23, 1995. However, the FWS remains concerned for the wolf's status, especially in light of the Rescission Bill requirements that prohibit management of HCAs. We are also concerned about increasing road densities and their adverse impact on wolves.

DOI-26

The FWS is concerned about the direct and indirect impacts on the wolf population occurring within the Lab Bay project area. Studies have clearly demonstrated a relationship between road density and decrease in wolf populations. Wolves generally are not present where the road densities exceed 0.93 mi/mi<sup>2</sup>.<sup>1</sup> A report conducted by the Forest Service concluded that where road densities exceeded 1 mi/mi<sup>2</sup>, wolf mortality exceeded 25 percent. Currently, Wildlife Analysis Areas 1527, 1529, and 1530 exceed that road density threshold. The DEIS states that after harvest, roads will be closed to mitigate potential effects of increased hunting pressures. These closures will reduce road densities after the project with the exception of WAAs 1527 and 1530 where the road densities will still exceed the threshold (1.1 and 1.3 mi/mi<sup>2</sup>, respectively). The FWS agrees that the wolf will be adversely affected.

DOI-27

Maintaining viable, well distributed wolf populations will ultimately depend on maintaining a relatively abundant, stable population of deer (Person, personal communication). Clearcutting has a cumulative impact on deer populations by reducing habitat capability. Ultimately, we believe, reduced habitat capability associated with various stochastic events will result in reduced populations of Sitka black-tailed deer.

DOI-28

The FWS estimates that within the next 10 to 30 years, given the past old-growth timber harvest on Federal, State, and adjacent Native corporation lands, significant localized

<sup>1</sup>Mech, L.D. 1989. Wolf Population Survival in an Area of High Road Density. *Am. Midl. Nat.* 121: 387-389.

DOI-25

Marbled murrelet surveys were not conducted on the Lab Bay Project Area. Given the fact that murrelet presence was found in 96 percent of the stands in the nearby Control Lake Project Area, including inland stands and stands adjacent to past harvest, we believe that it is reasonable to assume that use of the Lab Bay Project Area by murrelets would be similar. Marbled murrelet surveys are not currently planned for the Lab Bay Project Area. Current management direction for protection of nest sites is discussed in the Draft EIS and Final EIS TES Environmental Consequences section. Information from the marbled murrelet conservation assessment has also been incorporated into the wildlife sections, including a discussion of the proposed conservation strategy (USFWS 1995). Refer also to the Biological Assessment and Biological Evaluation in Appendix N of the Final EIS.

DOI-26

Concerns for gray wolf are discussed in the wildlife sections of the Final EIS. Also discussed are mitigation measures designed to lessen the effects, where possible, of timber harvest and road construction. Information from the wolf conservation assessment has also been incorporated. Refer also to the Biological Assessment and Biological Evaluation in Appendix N of the Final EIS.

DOI-27

We also anticipate that deer habitat capability will decline over time. The wildlife sections of the Draft EIS and Final EIS discuss these concerns.



## Responses to Department of the Interior

DOI-28

reductions in the Alexander Archipelago wolf populations will occur. As more roads are constructed and clearcut areas transform into second growth stands (thus rendering the areas unusable by deer) wolf populations will decline. The cumulative impact of the Lab Bay, Central Prince of Wales, Polk Inlet, and other planned future old-growth timber harvest is expected to broaden the localized impacts into range-wide population decline. We suggest that the FEIS address ways to improve wolf populations by: 1) improving habitat capability for deer; 2) minimizing habitat fragmentation and road construction; 3) developing and implementing monitoring plans; and 4) addressing the effectiveness of on-going land management activities.

### Other Trust Resources

DOI-29

As age structure of the seed producing coniferous forest declines as a result of clearcutting activities, populations of specialized passerine bird species, such as red crossbills, will inevitably be adversely affected, with local and possibly total population reductions. The DEIS does not address direct and cumulative impacts on these and other Federal trust species (e.g., neotropical migrant species) that could be affected by the loss of mature, old-growth forest and/or forested wetlands. We suggest that the FEIS address habitat capability on a landscape level and areas at lower elevations that produce large cone crops be identified and included as retention areas.

### Roads

DOI-30

Since the project area is approximately equal distance from existing LTF sites (Lab Bay, Calder Bay), equipment can be offloaded and transported by means of the existing roads. The DEIS states that if the Lab Bay Camp were reopened, the logging crew could access Calder Bay, eliminating the need for a float camp. The DEIS references two timber units that can be accessed with the Calder Tie road connection. We suggest that the FEIS include an analysis of impacts the Calder Tie Road will have on fish, wildlife, and their habitats.

DOI-31

We believe that adverse impacts from creating more roads, such as increased hunting pressure on wildlife and loss of additional old-growth forest and wetland habitats, should be considered more harmful to the Lab Bay resources than a temporarily moored floatcamp. Constructing the Calder Tie Road would increase access within WAA 1527, potentially affecting the harvest of deer and black bear. We believe that the FEIS should include a cost analysis to determine the feasibility and address the direct and cumulative impacts of a permanent impact versus temporary inconvenience.

DOI-32

We are concerned about the effectiveness of the Forest Service's road closure measures. The FWS has observed that implementation of proposed road closures has not eliminated or controlled access to remaining fish and wildlife habitat areas. We believe that offering post-timber operation road closures as mitigation for adverse impacts on wildlife populations is of minimal benefit to fish and wildlife if post timber sale closures cannot be enforced.

8

DOI-28

The Draft EIS and Final EIS discuss stands proposed for precommercial and commercial thinning. These stands are located on high quality deer winter range.

Alternatives 3, 4, and 6 emphasize maintenance of large contiguous blocks of old growth. Alternatives 4 and 6 would maintain corridors connecting these blocks.

Chapter 2 of the Final EIS includes a discussion of Project-specific monitoring and effectiveness monitoring incorporated in the Ketchikan Area Monitoring Strategy.

DOI-29

The management indicator species identified for the Tongass National Forest do not include neotropical migrants. The Forest Plan is currently under revision, and the addition of new management indicator species would need to take place at that level. However, until that time, effects can be partially addressed using old-growth dependent bird species such as the brown creeper, hairy woodpecker, and red-breasted sapsucker that use similar habitat and therefore would be similarly affected by harvest.

DOI-30

Alternative 6 does not propose construction of the Calder Tie Road. The Draft EIS and Final EIS include a brief analysis (Chapter 2) of the effects of construction of the Calder Tie Road on fish and wildlife habitats. It is noted that human access would increase, and hunting and fishing pressure would increase correspondingly.

DOI-31

Your comment was considered along with others and is reflected in Alternative 6, which does not propose construction of the Calder Tie Road.

The analysis provided in the Draft EIS supports this comment from the perspective of subsistence. Quantifying and monetizing subsistence effects for inclusion in an overall cost analysis would be crude at best, if possible at all.

DOI-32

A road access management plan has been developed for the Lab Bay Project area as part of the EIS. Most of the roads constructed for the project would be closed at the end of the sale; in addition, several miles of roads that are currently open would also be physically closed for resource protection. Roads will be closed primarily by physical means



## Responses to Department of the Interior

DOI-28

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DOI-32  
(Cont.)

such as pulling bridges or culverts or constructing barriers to motor vehicles.

The Lab Bay road cards note the roads proposed for closure and the reasons why. Closure points were selected in proximity to natural features such as stream crossings, to facilitate implementation. Implementation of the road closure plan will occur upon completion of the Lab Bay sale, and will be conducted by District personnel.

Monitoring of roads and road maintenance is done through final road inspections. A monitoring form is prepared, an inspection is made, and additional work needed to bring the road to Forest standards is performed. The Ketchikan Area also monitors a random selection of roads during the annual interdisciplinary BMP's monitoring trip. Periodic inspections of roads by road maintenance staff, other Forest Service employees, other agency employees, and the general public also are used for monitoring. Roads are also monitored after any large scale natural events such as unusually heavy rains.

## Responses to Department of the Interior

### DOI-33

Helicopter yarding has been fully evaluated in the Lab Bay timber sale planning process. Helicopter yarding is proposed for areas where road access is not feasible, or where significant resource concerns require the use of a reduced impact silvicultural prescription and logging system. Helicopter yarding is approximately twice the cost of conventional cable yarding methods, with yarding distance being the most important cost factor. Stands with low volumes per acre and greater than an average of one mile from a roaded landing area are generally not economically feasible for helicopter yarding systems.

### DOI-34

The alternative frameworks in Chapter 2 of the Final EIS provide a detailed description of each alternative's emphasis. Titles for the alternatives were not created since they can easily misrepresent the nature of the multiple actions within each alternative.

### DOI-35

All alternatives, including the No Action alternative, have the potential to have significant effects upon some subsistence resources and subsistence uses. While the areas of timber harvest vary from one alternative to another, the overall difference in total timber volume harvested among them is relatively insignificant in terms of the effect upon habitat. That is, in quantifiable terms (the decrease in wildlife habitat capability and expected decrease in overall harvests) the effects are very similar. The effects of including specific timber harvest units upon specific communities can be differentiated, but are difficult to quantify and again may tend to be "washed out" when alternatives are examined as total collections of units. That is, these differences are not well suited to summary statements, although the alternatives can be ranked in terms of degree of potential subsistence effects. Likely effects are more intensive effort in areas currently hunted, more extensive use of areas not now used, and attempts at resource substitution. Overall habitat capability is expected to decline, and may result in an increase in hunter effort expended per deer harvested. The more detailed analysis contained in Chapter 3 of the EIS allows the reader and decision maker to determine which parts of each alternative are likely to have the most significant effects upon subsistence.

Refer also to response to JK-3.

### DOI-36

Refer to response to SEACC-28.

We recognize that road construction, maintenance and repair are extremely expensive. We suggest that the Forest Service include in the FEIS, an analysis for using helicopter yarding as an alternative harvest method to reduce the need for additional roads. Helicopter yarding benefits fish and wildlife by reducing the amount and extent of new road construction, thus reducing habitat loss and the increased harvest of species. It reduces the amount of old-growth timber permanently removed by construction of roads and reduces the need to construct roads on soils with mass movement indexes, reducing impacts caused by sediment loading of streams. Helicopter yarding also reduces road related landslides, protects karst landscapes, and protects wetlands and habitat.

#### SPECIFIC COMMENTS

Chapter One, page 1-1: Alternatives 1 and 3 have titles ("No Action" and "Modified Proposed Action") while Alternatives 2, 4, and 5 are descriptive ("maximizes..." and "emphasizes..."). For consistency and ease of reference, we suggest that they all have titles.

Chapter Two, pages 2-3 through 2-14: In the Summary of Alternatives, Issue 2 (Subsistence), we believe it would be more meaningful to describe what effects will occur, rather than simply saying there will be "significant effects." Other sections use statements such as "habitat would be reduced by 1.8 percent." We suggest (as an example): "harvests would be reduced by 50 percent, thus causing nonsubsistence harvests on Federal public lands to be curtailed."

The effects of fish habitat loss on subsistence or commercial fishing are not addressed in Issue 2 (Subsistence), Issue 4 (Fish Habitat and Water Quality), or Issue 7 (Social and Economic Factors). On page 3-310, the DEIS states, "The Water Resources and Fisheries sections conclude that potential effects of the proposed timber harvest and road construction alternatives on salmon spawning and rearing habitat would be minimal or eliminated by applying the Forest Service standards, guidelines, and prescriptions described in detail in the Aquatic Habitat Management Handbook." According to a statement on page 3-262 about effects on fisheries at Port Protection (and worded slightly differently for Wrangell on page 3-264), "Since Forest Service standards and guides address these concerns and mitigate potential effects of logging activities on fish-bearing streams this report does not focus on these resources."

The DEIS acknowledges that in some communities in the study area, salmonid fish are the most important subsistence harvest, commercial fishing is a major industry, and there is high public concern about the potential effects of logging on fisheries resources. We believe the FEIS should highlight and include analysis of this proposal's impacts on fish habitat and explain how proposed Forest Service activities will protect fish and how salmon losses will be avoided or minimized.



## Responses to Department of the Interior

DOI-37

Chapter 2, page 13: The DEIS states under Alternative 4, Project-defined corridors would be harvested under 195 year-rotation. However, the following paragraph states no harvest would occur in Project-defined HCAs and corridors. These two sentences appear to be conflicting and need to be clarified.

DOI-37

Under Alternative 4, Project-defined Corridors would be entered for harvest under a 195-year rotation. For the Final EIS, the statement in the second paragraph has been reworded to read "Under this alternative, no harvest would occur within the Project-defined old-growth blocks."

DOI-38

The DEIS states a monitoring plan is not identified for floodplain, wetland, and riparian resources in the Lab Bay project area. Due to the relative high level of karst in the landscape, we suggest that a monitoring plan be implemented to address regrowth of forested wetlands, potential change in wetland hydrology as a result of road construction, and timber harvest's effect on the karst geology.

DOI-38

Chapter 2 of the Final EIS describes the relationship of the Lab Bay Project mitigation and monitoring to Forest Plan Monitoring and Ketchikan Area Monitoring Strategy. Project and site-specific monitoring for the Lab Bay Project includes monitoring of effects of harvest and road construction on high vulnerability karst. Refer also to response to AK-28.

DOI-39

The mineral activity tracts depicted in the TLMP Revision Draft EIS were in large part based on the U.S. Geological Survey (USGS) OFR-84-572, cited by Forest Service on page 3-9 of this document. The U.S. Bureau of Mines made modification of these terranes where additional geologic mapping information or high density of mining claim activity was known. Also, the TLMP Revision Draft EIS (p. 3-147 to 3-156) provides USGS's best professional judgement of the undiscovered mineral resources of the Tongass National Forest based on the open file report by Dave Brew.

DOI-39

The Mineral Resources section of the Final EIS has been revised to reference the TLMP Revision Supplement to the Draft Environmental Impact Statement (1991). This reference notes the U.S. Bureau of Mines modification to the U.S. Geological Survey (USGS) OFR-84-572.

DOI-40

We suggest revising the Mineral Resources section of the DEIS using the TLMP Revision Draft EIS as a reference, rather than having a different approach taken by another author. This is especially true because the Lab Bay DEIS refers to earlier work (1984) of the USGS, when a more up to date summary is available in the TLMP Revision Draft EIS.

We believe that this timber sale will have little or no effect on the mineral resources in the project area. The timber sale may benefit new mineral exploration. Proposed roads would improve accessibility and new road cuts may reveal mineralization that would otherwise remain unexposed.

DOI-40

The identification of 0.4 miles of road being built on Thorne Island under Alternative 4 in Table 3-21 is an error. The GIS database has been corrected, and the Final EIS presents the revised figure of 0 miles of road. Under the Thorne Island Uneven-Aged Management Plan, no roads are proposed for construction on Thorne Island.

Chapter 3, page 3-51, Table 3-21: Under Alternative 4, the table identifies a 0.4 miles road segment, #668028, accessing unit 220 in VCU 551 on Thorne Island. However, under Alternative 4, Thorne Island is scheduled for helicopter removal, with no roads planned. We suggest that the FEIS clarify the use of this road.



- DOI-41** [Chapter 3, page 61 and page 77, No Commercial Harvest Buffer: The DEIS states "A minimum 100 foot buffer is applied to either side of all Class I streams...." We suggest that the word "either" be replaced with "each."
- DOI-42** [Chapter 3, page 66: Please define "critical wetlands."
- DOI-43** [Chapter 3, page 69, Monitoring: The DEIS states that project-specific monitoring unique to the Lab Bay area has been identified for several resources. We believe that the FEIS should identify what these resources are and what project-specific monitoring will include.
- DOI-44** [Chapter 3, page 74: The DEIS states "Class II streams ...are subdivided into Class IIa and IIb." We suggest that the FEIS explain why TTRA Class II streams are subdivided into Class II(a) and Class II(b).
- DOI-45** [Chapter 3, page 81: We believe that the FEIS should acknowledge the Anadromous Fish Habitat Assessment findings that: 1) BMPs are not fully effective at protecting fish habitat; and 2) both effectiveness and implementation monitoring are necessary. Additional protection of Class III streams, and Class II streams which do not flow into Class I streams, is needed to fully control sedimentation and prevent long-term degradation of fish habitat downstream. Site-specific measures to protect water quality are needed for small, unclassified streams (e.g., intermittent, ephemeral, perennial).
- DOI-46** [Chapter 3, page 84: The DEIS states that Upper Calder and Red Lake will be harvested by helicopter. We believe that the FEIS should list the number of units that are proposed for helicopter yarding.
- DOI-47** [Chapter 3, page 106: We suggest that another disadvantage of clearcutting be added: "Fragments and decreases the amount of habitat used by species that depend on old-growth."
- DOI-48** [Chapter 3, page 123, Table 3-64: The suitability analysis performed for this project identified a total of 74,130 acres of suitable forest land, with 47,599 acres available for future harvest. The table shows where future harvest activity will occur during this rotation.
- Fragmentation, both naturally occurring and that which occurred due to previous harvesting, represents approximately 40%, 25%, 49.5%, and 74.3% in Wildlife Analysis Areas 1527, 1528, 1529, 1530, respectively. Proposed harvest activities will increase fragmentation in WAA 1527 by 24.1%, (cumulative impact total 64.1%), WAA 1528 by 21.4% (total 46.4%), WAA 1529 by 33.6% (total 83.1%), and WAA 1530 by 22.7% (total 97%). Considering these percentages, harvest would have a significant impact on wildlife occurring in WAAs 1529 and 1530. We believe that the FEIS should address how viable, well distributed wildlife populations would be achieved or maintained, as required under the National Forest Management Act, with this type of fragmentation occurring within the WAAs. Value Comparison Unit 528.1 should be taken out of Table 3-64, as it is a LUD II area.

11

## Responses to Department of the Interior

- DOI-41** "Either" was replaced by "each" in the Final EIS regarding stream buffer placement.
- DOI-42** 'Critical' wetlands, as used in the referenced text, means those wetlands that have very high quality values or functions that might be seriously impaired by road construction. Such wetlands would include, for example, those with potential to affect water quality on Class I and II streams and those which are used as major wildlife travel corridors. The Final EIS has been revised accordingly.
- DOI-43** Project-specific monitoring is described in detail in Chapter 2 of the Draft EIS and Final EIS. Reference to the Chapter 2 Monitoring discussion has been added to each resource section in Chapter 3.
- DOI-44** Refer to Response to AK-29.
- DOI-45** Effectiveness and implementation monitoring are addressed by the Ketchikan Area Monitoring Strategy. Since 1993, the Forest Service has worked jointly with the Alaska Department of Environmental Conservation to develop and implement an annual plan of work to prioritize water quality monitoring. Effectiveness of BMP's is being evaluated annually under this program, and the Forest Service Handbook (FSH 2909.22) allows for adjustment of standard practices to incorporate new information and monitoring results. Also refer to Response to AK-28.
- For the Lab Bay Project, Class I, II, and III streams were evaluated in the field by resource specialists. Site-specific buffers, BMP's, and other mitigation measures were developed for each stream. A variety of mitigation measures were frequently prescribed for headwater streams; these are described in Chapter 2 of the Final EIS. Also refer to Responses to DOI-12, DOI-13, SEACC-28.
- DOI-46** A table has been added to the Final EIS displaying the number of helicopter units in each alternative.
- DOI-47** The advantages and disadvantages of the silvicultural systems are for comparison between systems, and assist in the selection of the appropriate silvicultural system for the site. All of the even-aged systems described may result in fragmenting and decreasing the amount of habitat used by species that depend on old-growth. This disadvantage is not a criterion that can be used for selecting one silvicultural system over another and is therefore not included as a disadvantage of clearcutting.

## Responses to Department of the Interior

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**DOI-48**

The assessment of population viability is an ongoing science, which the Forest Service is evaluating in the 1996 TLMP Draft Revision. As noted in the EIS, Chapter 3, Biodiversity Section, viability within the ecological subprovince is expected to be maintained after implementation of the Lab Bay Project.

Total suitable forestland in VCU 528.1 is zero. This correction has been made in the Final EIS.



## Responses to Department of the Interior


<b>DOI-49</b>	[ Chapter 3, page 124: Table 3-66 is misleading. The column entitled "Remaining for future harvest 2005-2054" includes both second growth and old-growth timber supply. We suggest that this column include only the total of old-growth forest acres remaining.	<b>DOI-49 and 50</b>	The Cumulative Timber Harvest tables referenced in these comments, and associated discussion, have been revised in the Final EIS. Please refer to the 1996 TLMP Draft Revision which addresses the issue of long-term timber supply Forest-wide.
<b>DOI-50</b>	[ Chapter 3, page 124 & 125, Table 3-66 & 67: Of the 74,130 acres of lands available by forest direction, 26,531 acres of second growth currently exist, leaving 47,599 acres available for harvest. If 37,091 acres (Table 3-67) are projected for harvest, then only 10,508 acres will remain after 2054, which is only 22% of the original old-growth remaining, not 36.1 as indicated in this Table. We suggest that this be corrected.	<b>DOI-51</b>	The information in Table 3-70 of the Draft EIS is intended to provide an overview of successional habitat conditions across the Project Area. Additional information on forested lands within the Project Area boundary is presented in the Silviculture, Timber and Vegetation section of the EIS and in the Wildlife and Timber Resource Reports.
<b>DOI-51</b>	[ Chapter 3, page 137, Table 3-70: This table should specify how many of these acres are on Forest Service lands.	<b>DOI-52</b>	The 3,910 acres refers to the acres proposed for harvest under Types A through F. The 4,550 acres is the total acres proposed for harvest (Types A through I). The text in the Final EIS has been modified to clarify this.
<b>DOI-52</b>	[ Chapter 3, page 162: The DEIS states "Current conditions ... as a maximum 3,910 acres (Alternative 2)..." Table 3082 shows a maximum of 4,549 acres proposed for harvest under Alternative 2. We suggest that this discrepancy be clarified in the FEIS.	<b>DOI-53</b>	The Transportation, Logging, and Facilities section of the Final EIS has been changed to correctly identify the Labouehere Bay LTF as a low-angle slide.
<b>DOI-53</b>	[ Chapter 3, page 212, LTF Status and Location, Table 3-27: Labouehere Bay has a "slide," not an "A-frame." Ketchikan Pulp Corporation replaced the A-frame LTF with a log skid slide-off facility.	<b>DOI-54</b>	There was an incorrect reference to the disposal of slash into the water in the Draft EIS. During helicopter yarding operations for Thorne Island, the slash that accumulates will be disbursed back into the harvest unit. The Final EIS text has been revised to clarify this point.
<b>DOI-54</b>	[ Chapter 3, page 222: The DEIS states "Slash typically would be dropped into water." We do not support impacting aquatic resources further by disposing of slash in this manner. The acreage of aquatic habitat affected by this additional deposit of material should be identified. We suggest that the FEIS address the feasibility of other potential alternative uses for the slash and bark (e.g., hog fuel).	<b>DOI-55</b>	The "MMBF" in the title of this table has been changed to correctly read "MBF".
<b>DOI-55</b>	[ Chapter 3, page 225, Table 3-109: According to the table, estimated volume is indicated in MMBF. However, estimated volumes per alternative appear to be in MBF. We suggest that this be corrected in the FEIS.	<b>DOI-56</b>	For the Final EIS, a column has been added to the table displaying volume of timber anticipated to be removed as a result of road construction.
<b>DOI-56</b>	[ Also, each respective alternative column should include the volume of timber removed as a result of road construction, since that timber will be processed through one of the LTFs.	<b>DOI-57</b>	The Forest Service has included the Uneven-Aged Management Plan for Thorne Island in Alternative 6 of the Final EIS. Under this plan, roads and a log transfer facility would not be constructed on Thorne Island.
<b>DOI-57</b>	[ Chapter 3, page 225: The DEIS states that the West Thorne Island LTF site is recommended based on an excellent deep water rafting area adjacent to the site. However, the DEIS references that National Marine Fisheries Service concluded the site does not meet the Alaska Timber Task Force siting guidelines for water depth or potential bark accumulation. In review of the National Oceanic Atmospheric Administration Nautical Chart 17360, FWS reconfirmed that the proposed LTF location would not meet the Task Force guidelines. Using helicopter yarding would eliminate bark accumulation in this area.		



DOI-58	[Chapter 3, 225, Table 3-102: The estimated volume of timber to be transported by each LTF should include road right-of-way volume. The Table should reflect this amount in order for the public to review the true total amount of volume crossing each LTF.]	Responses to Department of the Interior	
DOI-59	[Chapter 3, page 251: Under "Key Terms," ANILCA should be identified as a Federal law passed in 1980.]	DOI-58	For the Final EIS, a column has been added to the table displaying volume of timber anticipated to be removed as a result of road construction.
DOI-60	[Page 3-275, paragraph 6: The second sentence should read: "Previously the bag limit was 4 antlered deer", instead of "Currently...."]	DOI-59	Your comment was incorporated into the Final EIS under the Key Term "ANILCA".
DOI-61	[Pages 3-281 and 3-282: It is unclear how the alternatives titled "Conventional Harvest" and "Uneven-aged Management Plan" relate to Alternatives 1 through 5. We suggest that this be clarified in the FEIS.]	DOI-60	The sentence your comment refers to was corrected for the Final EIS.
DOI-62	[Pages 3-312 and 3-313: This section discusses competition between subsistence and nonsubsistence hunters and among different subsistence hunters, but does not give detailed consideration to competition between "local" subsistence users and off-island subsistence hunters (e.g., from Wrangell) who come to the area. We believe that these interactions should be addressed.]	DOI-61	Harvest is proposed for Thorne Island under each of the action alternatives. Two different harvest plans are proposed. In alternatives 2, 3, and 5, a conventional, roaded harvest system is proposed. Under alternatives 4 and 6, Thorne Island would be harvested using an Uneven-aged Management Plan.
DOI-63	[Pages 3-312 through 3-317: The DEIS contains a general misunderstanding concerning the authority of the Federal Subsistence Board. In several places in this report, there are statements indicating that the Board can "regulate" the nonsubsistence harvest of deer. The Board only has the authority to <i>close</i> Federal public lands to nonsubsistence hunting when subsistence needs cannot be met. The Board does not set season or bag limits for nonsubsistence hunting. This concept appears through this section and needs to be corrected.  1. Page 3-312, paragraph 1, last sentence: "...the nonsubsistence take of deer in WAA 1528 may need to be regulated due to increased harvest."  2. Page 3-312, paragraph 3, second to last sentence: "...so between 2004 and 2040, some restrictions on the nonsubsistence take of deer may need to be considered." This could only be done by the State, not the Federal Subsistence Board.  3. Page 3-312, paragraph 5, sentence 1: "The Federal Subsistence Board may use its authority to regulate nonsubsistence harvest of deer..."  4. Page 3-316, last paragraph, last sentence: "There may be insufficient deer habitat capability to meet total consumptive needs through the year 2004, so nonsubsistence activities may need to be regulated in some way." Again, this could only be done by the State.]	DOI-62	This comment raises a substantial point, but one which cannot be addressed in this project level EIS. The Federal Subsistence Board (FSB) has authority to act in this regard. First, subsistence use cannot be restricted by regulation until all non-subsistence use has been excluded. Second, "customary and traditional uses" can be used to define (and differentiate among) subsistence users, but only by the FSB. It would be presumptuous for any single agency to develop this information without direction from the FSB and their staff.  More detailed information with which to examine this issue is presented in the Lab Bay Subsistence Resource Report (Galginaitis 1993).
DOI-63		DOI-63	In response to your comment, we have revised the language in the pertinent discussions of the Final EIS Subsistence section to "restrict" rather than regulate.

If you have questions regarding these comments, feel free to contact Mr. James R. Coldwell of the Bureau of Mines (907) 364-2111 or Mr. Nevin Holmberg of the Fish and Wildlife Service at (907) 586-7240. We appreciate the opportunity to review this document.

Sincerely,



Regional Environmental Officer - Alaska



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, Washington 98101

OCT 12 1990

REPLY TO  
ATTN OF:

WD-126

Ref: 95-047-AFS

Dave Arrasmith, Planning Staff Officer  
Ketchikan Administrative Area  
Tongass National Forest  
Federal Building  
Ketchikan, Alaska 99901

Dear Mr. Arrasmith:

In accordance with the National Environmental Policy Act (NEPA) and our responsibilities under Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the Lab Bay Project Area, Ketchikan Pulp Company Long-Term Timber Sale Contract, Draft Environmental Impact Statement (draft EIS). The draft EIS evaluates four (4) action alternatives to harvest between 63.5 to 102.4 million board feet (MMBF) of timber from approximately 2,919 to 4,550 acres of northern Prince of Wales Island in Southeast Alaska.

Based on our review, we have rated the referenced draft EIS EC-2 (Environmental Concerns-Insufficient Information). This rating and a summary of our comments will be published in the *Federal Register*. The enclosure provides additional comments and details.

Our primary concerns regard the direct and cumulative impacts to water quality from the construction and operation of a new LTF on the west side of Thorne Island, and the continued operation of LTFs at the Calder Bay site and the Labouchere Bay and Whale Pass sites. Additional site specific bark accumulation information is needed to evaluate impacts to the marine environment. The EPA supports the Thorne Island Uneven-Aged Management Alternative as it would preclude the need for a new LTF and harvest roads in the project area.

Implementation of Best Management Practices (BMPs) for timber harvest, and road construction and maintenance may not ensure that the Alaska Water Quality Standards (WQS) will be met. Additional measures may be required for Class II and III streams in order to minimize impacts to downstream water quality and aquatic habitat. All lakes, regardless of their size, deserve full riparian protection to maintain WQS. Project-specific

## Responses to Environmental Protection Agency

### EPA-1

The comment regarding the support of the Thorne Island Uneven-Aged Management plan is noted. This plan has been incorporated into Alternative 6, under which a new LTF on the west side of Thorne Island will not be required. For the comments regarding information on bark accumulation and the continued operation of the Lab Bay, Calder Bay, and Whale Pass LTF's, see response to comment DOI-20.

### EPA-2

Refer to Responses to DOI-12, DOI-13, EPA-15.



EPA-2

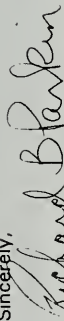
water quality monitoring is required to ensure compliance with these standards. Water Quality Standards may be exceeded as a result of the proposed timber sale.

EPA-3

Furthermore, the final EIS should include information on effectiveness monitoring for water quality effects of timber harvest, and road construction and maintenance. A feedback mechanism should be developed so that adjustments to the standards and guidelines, BMPs, standard operations, and timber sales administration can be made when effectiveness monitoring indicates a need.

Thank you for the opportunity to review this draft EIS. Please contact Mark Jen at (907) 271-3411 if you have any questions about our comments.

Sincerely,



Richard B. Parkin, Manager  
Geographic Implementation Unit

Enclosure

cc: USFWS, NMFS, ADEC, ADNRR, ADGC - Juneau,  
ADFG - Douglas

Responses to Environmental Protection Agency

EPA-3

Refer to Response to AK-28.

EPA-4 Refer to Response to DOI-20.

EPA-5 Refer to Response to DOI-20.

## LOG TRANSFER FACILITIES

### Site Specific Information

All action alternatives propose the use of three (3) existing log transfer facilities (LTFs) in the Project Area, located at Labouchere Bay, Whale Pass, and Calder Bay. Chapter 3, Transportation, Logging, and Facilities, provides a general description of the existing LTF status and location (page 3-212). However, the draft EIS does not include a discussion of the amount and extent of bark accumulation at the Labouchere Bay, Whale Pass, and Calder Bay LTF sites. The impacts to the marine environment may be significant and require further evaluation in the final EIS.

EPA-4

The final EIS should present site-specific bark accumulation information at the existing Labouchere Bay, Whale Pass, and Calder Bay LTF sites. This information should include an areal extent and outer boundary of bark accumulation, an estimate of bark thickness and percent cover. In addition, the final EIS should include the bathymetry, substrate type and slope, water current and flushing (buoy and dye test), and biological characteristics (species, diversity, and abundance) at the Labouchere Bay, Whale Pass, and Calder Bay LTF sites. The consideration of other alternatives to log transfer or alternatives to log transfer sites may be warranted.

EPA-5

The 1978 U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) field report of existing and proposed log transfer and storage facilities in Prince of Wales Island, indicated that the Calder Bay site was shallow and has poor flushing.<sup>1</sup> USFWS and NMFS recommended that this site be a candidate for a phase-out program. In order for EPA to make a determination, a current field survey of the Calder Bay site, along with the other two LTF sites, is required. This additional information should be provided in the final EIS.

A new LTF is proposed for a site on the west side of Thorne Island for Action Alternatives 2, 3, and 5. The draft EIS mentions the reconnaissance studies conducted by the transportation planning specialists and an intertidal/subtidal survey by the USFWS and NMFS<sup>2</sup> (p. 3-223). In the survey, the USFWS and NMFS concluded that the West Thorne Island site does not meet the Alaska Timber Task Force (ATTF) siting guidelines for water depth and potential bark accumulation based on the low flushing potential, as evidenced by the presence of silt within the bottom composition. However, USFWS and NMFS did not have an objection to the construction and operation of an LTF at this location because the site is low in overall productivity.

EPA-6

In general, the Environmental Protection Agency (EPA) supports an alternative to log transfer which would avoid or minimize the direct, indirect, and cumulative impacts to the marine environment. The direct land to barge transfer of logs would avoid and minimize

the adverse impacts of bark discharge, accumulation, shading, and compaction associated with log transfer, rafting, and storage.

The draft EIS proposes an alternative to the development of a LTF on the west side of Thorne Island (Appendix E). Under the Thorne Island Uneven-Aged Management Plan, logs would be removed by helicopter. Two options have been proposed to process the logs. In the first option, logs would be transferred via helicopter to barges, where they would be limbed, banded, and dropped into the water for rafting to a storage or processing location. The second option would drop logs directly into log booms anchored in the water, remove logs from the water for processing and bundling, and return logs to the water for rafting. Option 1 would minimize the discharge of slash into the marine environment. Option 2 would pose a higher risk from logs lost due to sinking or breaking free of log booms (page 3-222). EPA supports option 1, which would minimize the discharge of bark and other woody debris into the marine environment. This option should also be explored as an alternative to the continued use of the existing LTFs at Labouchere Bay, Whale Pass, and Calder Bay sites.

EPA-4

Potential Impacts to the Marine Environment

The draft EIS provides a general discussion of the potential impacts associated with log transfer facilities and log storage on the marine benthic habitat, based on a review of the existing literature (page 3-228). The ATTF developed the Log Transfer Facility Siting, Construction, Operation, and Monitoring/Reporting Guidelines to identify measures to minimize impacts to the environment from log transfer facilities.

EPA appreciates the inclusion of the ATTF Guidelines for specific criteria to the draft EIS. Table 3-108 provides a comparison of the ATTF guidelines with the proposed Thorne Island LTF site (page 3-223). The final EIS should include a similar comparison with the Labouchere Bay, Whale Pass, and Calder Bay LTF sites.

EPA-5

The draft EIS attempts to quantify the total impacts of bark deposition (acres) for each action alternative (Table 3-114). This evaluation was based on the assumption that the average disturbance area for each LTF site is 1.96 acres. This value of 1.96 acres was based on a weighted average of 31 sites, varying from bark areas ranging from 0 to 9.0 acres, at only one point in time (Faris and Vaughn, 1976). The EPA cautions applying this 1.96-acre value to predict impacts of bark accumulation for all LTF sites. The data were obtained from LTF sites ranging from those having recent usage to those not actively used for many years. The amount and location of bottom that is covered by bark may be affected by currents, deposits of silt, changes in the log transfer operation, and other factors. Site specific information on bark accumulation at the LTF sites is needed to determine the impacts of bark deposition for each action alternative. Therefore, we recommend that the final EIS incorporate site specific bark accumulation data. The assumption that the average disturbance area for each LTF site is 1.96 acres should not be made.

EPA-6

Responses to Environmental Protection Agency

EPA-6

The Forest Service has included the Uneven-Aged Management Plan for Thorne Island in Alternative 6 of the Final EIS. Under this plan, roads and a log transfer facility would not be constructed on Thorne Island. Logs would be yarded by helicopter to a log boom or directly onto a barge. The Forest Service agrees that transferring logs to barges, rather than dropping them directly in the water, during helicopter yarding is the preferred least impact option. The final decision as to which system will be used will be made at the time of sale implementation.

EPA-7

Refer to Response to DOI-20.

EPA-8

Refer to Response to DOI-20.



### Log Rafting and Storage

The Alaska Timber Task Force Guidelines recommend that log rafting and storage in depths greater than 40 feet deep at mean lower low water (MLLW). *Rooted aquatic macrophytes and algae generally begin to decrease in density in Southeast Alaska below this depth. Rafting in 40+ feet MLLW or more will protect these organisms and habitat (less than 40 feet MLLW) from bark accumulation and shading. Log rafting storage may occur at depths less than 40 feet (MLLW) depending on biological productivity, sensitivity to shading and potential risk of bark accumulations.*

### EPA-9

The draft EIS states that the proposed and existing log storage areas in the Project Area are deep enough and are not expected to ground (page 3-229). The final EIS should document the location and depth of proposed and existing log rafting and storage areas.

### Existing State and Federal Regulations

The Environmental Protection Agency (EPA) considers bark to be a pollutant. The discharge of bark and other woody debris from log transfer into marine waters constitute a point source discharge, and therefore, requires a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act (CWA). The NPDES permit is based on state water quality standards and/or effluent standards promulgated by EPA under the CWA. Since there are no effluent standards for LTFs, NPDES permits are based on EPA's best professional judgement. Permit conditions rely on Best Management Practices (BMPs) and monitoring procedures in the ATTF Guidelines.

In addition, the Corps of Engineers regulates construction of log transfer facilities through Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into waters of the United States.

The State of Alaska, Department of Environmental Conservation, must certify that any permitted discharge of pollutants into waters of the United States is consistent with the Alaska State Water Quality Standards (WQS). The state typically authorizes bark accumulation on the bottom of marine waters not to exceed a Zone of Deposit of one (1) acre (18 AAC 70.033).

### Best Management Practices

The achievement of WQS for non-point source activities occurs through the implementation of Best Management Practices (BMPs) designed to protect beneficial uses. The draft EIS incorporates site-specific mitigation measures to address fish, water quality, soils, minerals, karst features, wildlife, etc. into Unit and Road Designs (Appendix C). These mitigation measures are based on BMPs prescribed in the Soil and Water Conservation Handbook (FSH 2509.22) and the Aquatic Habitat Management Handbook (FSH 2609.24). The final EIS should provide a description of BMPs to minimize the

### EPA-10

## Responses to Environmental Protection Agency

### EPA-9

See DOI-20. Since the Lab Bay, Calder Bay, and Whale Pass LTF are currently permitted for use, the effects of their continued use through September 9, 1997 have already been considered in other decisions and are therefore are not further addressed in this EIS. As noted in Table 3-107 of the Final EIS, the Thorne Island proposed LTF site is less than 40 feet in depth at a distance within 330 feet of the shoreline. Alternative 6, the preferred alternative of the Final EIS proposes an uneven-aged management plan for Thorne Island, which would not require construction of the LTF.

### EPA-10

The Soil and Water Conservation Handbook (FSH 2509.22) contains BMP's for the planning, location, design, and construction of LTF's. The operation of the existing LTF's is conducted in compliance with permits established for each site. See also DOI-20.

EPA-10 [ discharge of bark, woody debris, and other pollutants from the existing and proposed LTFs. These BMPs could include the guidelines set forth by the Alaska Timber Task Force.

Responses to Environmental Protection Agency

- EPA-11Refer to response to DOI-32.
- EPA-12Alternative 6 excludes from harvest any units within a known domestic water supply.

WATER QUALITY

Road Construction/Maintenance/Closure

Road corridors are the major source of management-related sediment in a watershed (page 3-49). New road construction, grading of cuts and fills, ditching, and installation of culverts exposes soil to erosional forces. The draft EIS provides measures to minimize sediment delivery under all of the action alternatives (Appendix C). Proper maintenance/closure of roads after construction is essential to ensure that the sediment standard is not exceeded. The lack of proper road maintenance in the Lab Bay project area has raised water quality concerns with the Alaska Department of Environmental Conservation (ADEC). Culverts and ditchlines have not been kept clear in certain areas, resulting in blockage and runoff across the road surface. In other areas, sediment is being transported to active drainages. The final EIS should ensure that proper maintenance of new and existing roads are conducted during the life of this project. If adequate funds and resources are not available to maintain the roads for the life of this project, they should be closed in accordance with State and Federal requirements and standards.

EPA-11

Drinking Water

The draft EIS indicates that residents of Port Protection, Point Baker, Calder, El Capitan and Whale Pass use springs and small streams originating from National Forest System Lands (Page 3-46). The karst features of the area allow water to travel very rapidly from the surface to spring outlets, which may make drinking water supplies very susceptible to disturbance. Most of the alternatives require timber harvest and road construction within or adjacent to watersheds which supply domestic water to these communities.

Based on the draft EIS, we are not certain if adequate measures to protect community drinking water sources in the Lab Bay project area are provided. The draft EIS indicates that geotechnical investigations, including dye tracing to evaluate potential adverse effects on recharge area to domestic water supply, would be required prior to road construction due to the karst topography and intricate subsurface drainage patterns (page 2-17). The final EIS should include information on the geotechnical investigations using dye tracing and identification of watershed areas which may be prone to water quality degradation. Although project specific monitoring of water quality attributes before, during, and after the completion of timber harvest is proposed (page 2-31), a water quality monitoring plan, which identifies the sampling locations, sampling parameters and attributes, and sampling frequency, should also be provided in the final EIS.

EPA-12



### Riparian Protection Areas

A recent U.S. Forest Service report concluded that current practices for timber harvest planning and application are not fully effective in protecting anadromous fish habitats on the Tongass National Forest.<sup>3</sup> Most Class III streams are not currently being buffered to prevent negative effects of timber harvest and roads, such as loss of woody debris and changes in energy sources and nutrients, that can degrade downstream fish habitats. The report recommended that increased headwater protection from timber harvest are very important protective measures that are needed.

The draft EIS indicates that certain Class III streams have been buffered to the slope break of the channel or to a wind resistant boundary to protect water quality and prevent significant increase in stream temperature (page 3-57). However, blow down of slope break buffers presents a significant concern for impacts to water quality and fish habitat. Buffers should be selectively harvested to remove the most wind-prone trees while retaining those that are less susceptible to blowdown. Additional measures may be required to effectively minimize the potential for blow down and associated impacts to downstream water quality. The final EIS must include full protection of first and second order streams.

#### EPA-13

These first and second order streams are important in maintaining downstream system integrity and water quality as well as providing fisheries habitat. Disturbed first and second order streams may become sediment sources to downstream areas. In addition, loss of woody vegetation along these headwater streams may eventually lead to reduced large woody debris in downstream reaches. The greatest opportunity for maintaining stream conditions through BMPs may be on first and second order streams. Therefore, the EPA strongly recommends that adequate riparian protection be provided for first and second order streams to minimize downstream impacts to water quality and aquatic habitat.

The National Forest Management Act (NFMA) requires that riparian areas be established to protect water quality and fisheries habitat. The Tongass Timber Reform Act (TTTRA) requires a minimum 100-ft buffer from Class I and II streams. However, the draft EIS has subdivided Class II streams into Classes IIa and IIb (page 3-74). Class IIa are streams that flow directly into Class I streams and are subject to TTTRA stream buffer requirements. Class IIb streams are those that flow into Class II or Class III streams. Although Class IIb streams may have limited sport fisheries values, they have potential significant influence on water quality of downstream aquatic habitat. Class IIb streams deserve the full 100-ft riparian buffer protection to ensure that water quality will not be degraded. Appendix L, Riparian Management Area Buffer Widths, should be revised in the final EIS to reflect protection of Class IIb streams.

#### EPA-14

In the project area, several Class I streams either flow into or out of Class I lakes. The TTTRA and the Forest Service Standards and Guidelines require the retention of 100-ft minimum width buffer areas along lakes such as this. The draft EIS indicates that lakes larger than 50 acres receive a 100-ft no-harvest buffer, plus a 400-ft selective harvest buffer (page 3-61). Whereas, lakes less than 50 acres, but greater than 5 acres, receive

### Responses to Environmental Protection Agency

#### EPA-13

Refer to responses to AK-35, DOI-12, and SEACC-28.

#### EPA-14

Refer to response to AK-29.

#### EPA-15

The minimum widths for riparian buffer components for lakes are provided in Appendix L. During the Lab Bay planning process, all lakes protected under TTTRA received a minimum 100-foot no commercial harvest buffer, regardless of lake size. These buffers are not depicted on the Unit Design Cards (Planning Record) due to limitations on space and clarity. However, all unit boundaries are located to show the required setback from TTTRA streams and buffers are described in the narrative portion of the Unit Design Cards. The text referenced in the comment under Chapter 3, Floodplains, Riparian Areas and Wetlands, was a generalized description of the lake buffers, and has been revised in the Final EIS.

Refer also to response to AK-29. All units will be laid out in compliance with minimum 100-foot buffers from all Class I and II water bodies, per the November 21, 1995 Forest Service letter of clarification.



100-ft no-harvest buffers. Lakes less than 5 acres are managed under the 100-ft planning level zone. The type and width of buffer protection a lake receives should depend on the Class of stream feeding it, not the size. A small Class I lake (< 5 acres) deserves the same protection as larger Class I lakes. Smaller and shallower lakes may be more susceptible to water quality degradation. The EPA recommends that all lakes receive full riparian buffer protection to maintain beneficial uses of WQS. The final EIS should depict the types and widths of buffer areas around lakes in the Project Area (Appendix F and Appendix L)

EPA-15

MONITORING

The rationale and strategy for monitoring in the Lab Bay project area needs to be consistent with the purpose of the project and the overall monitoring plan for the Ketchikan Area. The final EIS should indicate how monitoring for this project will be integrated with the overall monitoring plan.

EPA-16

The draft EIS provides specific measures to mitigate impacts guided by the proposed land use designation management prescription, and by following BMPs of the Soil and Water Conservation Handbook, and the Forest-wide standards and guidelines (Appendix C). We are uncertain how these specific mitigation measures will be monitored to determine their effectiveness. Monitoring is particularly important, because it provides a check on the predictions of effects for the action alternatives. It is important to evaluate the effectiveness of planned mitigation measures to protect potentially affected resources.

EPA-17

The draft EIS identifies seven (7) Project-Specific Monitoring activities (page 2-30). One of the project-specific monitoring activities is to prevent significant decrease in water quality for the residents of Port Protection and the Whales Resort Area. Other water quality characteristics which influence beneficial uses, and that may be affected by timber harvest and associated activities, include sediment and turbidity, temperature and dissolved oxygen, stream chemistry, and bacteria (page 3-46). The final EIS should discuss how these characteristics will be monitored. A detailed monitoring plan would include types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in plan implementation, and availability of results to interested and affected groups. A helpful document for developing water quality monitoring plans: *Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska (EPA/910/9-91-001, May 1991).*

EPA-18

The final EIS should also include a feedback mechanism which relies upon monitoring so that standards and guidelines, BMPs, standard operations, and timber sale administration are adjusted when effectiveness monitoring indicates a need. Providing such a process for adjustment will ensure that mitigation measures will improve in the future and that unforeseen effects are recognized and minimized.

EPA-16 Refer to Response to AK-28.

EPA-17 Refer to Response to AK-28.

EPA-18 Refer to Response to AK-28.

## Responses to Environmental Protection Agency

### PAGE SPECIFIC COMMENTS

EPA-19	3-6 The draft EIS indicates that no prescribed burning is anticipated nor is burning of slash recommended. The final EIS should explain how slash will be treated from harvest areas, roads, and landings.	Slash composed of non-merchantable logs, tops, and limbs will be scattered within the harvest units or along the road right of way. Large non-merchantable logs that remain at landing locations can be made available to the public for firewood upon completion of the timber sale. Depending upon market conditions, salvage sale opportunities may become available. This information is discussed in the Air Quality section of the Final EIS.
EPA-20	3-46 The text indicates that water quality within streams and lakes of the Project Area is generally good to excellent. Can this be quantified? Is baseline water quality data available to use for comparison with post timber harvest and road construction activities?	
EPA-21	3-55 The text states that all action alternatives will result in an increased risk of pollution from accidental spills of petroleum products and that the risk of spills is highest at landing areas and along roads. The final EIS should identify potential sources of petroleum, along with the identification, size, and volume of any fuel storage tanks/facilities. A spill prevention, control, and countermeasure (SPCC) plan may be required pursuant to the Oil Pollution Prevention Regulations (40 CFR Part 112)	Table 3-19 of the Draft EIS presents the only available water quality data for the project area. Very little baseline data exists, and it is not sufficient to be used to compare pre- and post-harvest and road construction activities.
EPA-22	3-229 Table 3-113 displays the effects of bark deposition associated with the proposed alternatives. The effects are identified as Short-term recovery (SR), Continuing Impact (CI), and New Impact (NI). We are not certain what information is conveyed from this table. It may help clarify our misunderstandings by defining or quantifying these three (3) parameters.	The Ketchikan Area has completed a Pollution Prevention Plan. This plan is required to be followed by contractors working on Forest Service land. The location, size, and volume of any fuel storage area that may be established by the timber sale purchaser can not be identified at this time. See also response to DOI-21.
EPA-23	Appendix E: Thorne Island Uneven-Aged Management Plan  Alternative 4 would implement an uneven aged management plan for Thorne Island (Appendix E). This Plan incorporates selective harvesting and helicopter yarding, which would preclude the construction of a new LTF and forest roads (page 2-15). The final EIS should incorporate an uneven-aged management plan for Thorne Island to all action alternatives, including 2, 3, and 5. A cost analysis for the uneven aged management plan should be prepared for all action alternatives and included in the final EIS.	Table 3-113 of the Draft EIS identifies the existing and proposed LTF sites and indicates four categories of effects that would occur under the alternatives. Under the No Action Alternative, existing LTF's are expected to be in a state of short-term recovery (SR) from the effects of previous use. Under the action alternatives, existing LTF's would receive impacts consistent with continued operation (CI). Under action alternatives 2, 3, and 5, the Thorne Island LTF would be constructed, creating a new impact to the site (NI). No effects would occur at the Thorne Island LTF site under the No Action Alternative or action alternatives 4 and 6, as it would not be constructed (0).
EPA-24	Appendix F: Unit Design Cards Appendix H: Road Cards  TTRA and Forest Service Standards and Guidelines require the retention of a 100-ft minimum width buffer along Class I lakes. Riparian buffer areas are not graphically depicted around these lakes on the Unit Design Cards. The final EIS should show buffer areas around lakes.	
EPA-25	The location of any major culverts and bridges to be installed for proposed new roads or reconstruction of existing roads should be indicated in the Unit Design Cards. The Road Cards should include a description of the culvert types and dimensions (length and diameter).	The Final EIS includes two alternatives, 4 and 6, under which Thorne Island would be harvested according to the Uneven-Aged Management Plan. Refer to Appendix E for a cost analysis for the Uneven-Aged Management Plan.
EPA-24	Refer to response to EPA-15.	
EPA-25	The Road Maps (Appendix H) indicate the locations of Class I, II, and III stream crossings for which timing restrictions are required or recommended. Road Cards provide information on number of stream crossings and locations where bridges are needed. Design-level information on culvert and bridge type and dimension will be provided at the final layout stage.	

**ENDNOTES**

1. U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1978. Report of Field Investigations of Existing and Proposed Log Transfer and Storage Facilities, Prince of Wales Island, Kosciusko Island, Sumez Island, Klawock Island, Tuxekan Island, Marble Island, Hassler Island, Revillagigedo Island, Grant Island and Cleveland Peninsula (unpublished).
2. National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1992. Report of Field Investigations, Thorne Island, Stevenson Island, Hassler Island, and Neets Bay and Traitors Cove on Revillagigedo Island (unpublished).
3. U.S.D.A., Forest Service. 1995. Report to Congress. Anadromous Fish Habitat Assessment. R10-MB-279.



# Responses to Glacier Grotto

Ketchikan, Ak 99901

OR 225-7453

Forest Supervisor, Ketchikan Area  
Tongass National Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan, AK 99901

Dear Sir,  
After reviewing the Draft Lab Bay EIS it is my recommendation as the President of the Glacier Grotto that alternative #1 be selected as the responsible alternative. The Glacier Grotto is a state wide organization of cavers under the umbrella of the National Speleological Society. One of the grottos primary objectives is the protection of caves and karst.

1. Only alternatives 1 and 3 protect karst and caves.

1. Only alternatives 1 and 3 protect karst and caves. I believe the
2. If any alternative other than 1 is selected, the 1988 Federal Caves Resources

USDA/USFS will be in violation of the Act, resulting in possible litigation.

3. Only alternative 1 is fiscally responsible, as the other alternatives loose millions of dollars. Americans overwhelming support the idea of a balanced budget. In order to achieve this goal, the subsidies and industrial welfare must be cut on all levels.

4. The Lab Bay area has already been heavily logged, and subsidies, and industrial welfare must be cut on all levels. accumulative effects, on wildlife and visual aesthetics haven't been considered fully.

5. Regeneration on karsted lands within the Lab Bay area is poor in many places, making protection of existing old growth all that more important.

important. please consider karst and caves heavily when making the final decision.

Thank you.

Sincerely,  
  
 Marcel LaPerriere, President

<b>GLG-4</b>	The updated economic analysis for the action alternatives is presented in the Socio-Economic section in Chapter 3 of the Final EIS.
<b>GLG-5</b>	Cumulative effects to wildlife and visuals resources are analyzed in Chapter 3 of the EIS.
<b>GLG-6</b>	The natural regeneration on previously harvested karstlands in the Lab Bay Project Area meets reforestation requirements.
<b>GLG-7</b>	The Geology, Minerals, & Karst Resources section of the Final EIS provides a detailed analysis of karst and caves. In addition, Alternatives 3 and 6 do not propose harvest on high vulnerability karst.

The natural regeneration on previously harvested karstlands in the Lab Bay Project Area meets reforestation requirements.

The Geology, Minerals, & Karst Resources section of the Final EIS provides a detailed analysis of karst and caves. In addition, Alternatives 3 and 6 do not propose harvest on high vulnerability karst.



**Southeast Alaska Conservation Council**  
SEACC 419 Sixth Street, Suite 328 Juneau, AK 99801  
(907) 586-6942 phone (907) 463-3312 fax

**Responses to Southeast Alaska Conservation Council**  
**SEACC-1** The "relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity" is discussed in the Final EIS in relation to the proposed action.

Forest Supervisor  
Ketchikan Area  
Tongass National Forest  
Federal Building  
Ketchikan, AK 99901

re: Lab Bay Draft EIS  
Dear Forest Supervisor:

The following comments are submitted on behalf of the Southeast Alaska Conservation Council (SEACC) on the Lab Bay Draft Environmental Impact Statement (DEIS). SEACC is a broad-based coalition of 15 volunteer citizen organizations in 12 communities ranging from Ketchikan to Yakutat, including the Alaska Society of American Forest Dwellers in Point Baker and the Prince of Wales Conservation League based in Craig. Our members live and work in many of the communities which would be adversely affected by this timber sale, including Point Baker, Port Protection, Whale Pass, Craig, Klawock, Thorne Bay and Coffman Cove. Moreover, SEACC members from these Prince of Wales Island communities, as well as Wrangell, Petersburg, and Ketchikan, also use this area for the commercial, subsistence, and recreational use of fish and wildlife, the exploration and enjoyment of the project area's internationally significant cave and karst ecosystems, and other purposes.

Of primary concern to SEACC's members is the long-term, cumulative impact of the level of development proposed in the DEIS for this project area on their communities, livelihoods, and way of life. The National Environmental Policy Act (NEPA) requires the Forest Service to prepare an EIS that discloses and discusses "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." 42 U.S.C. Section 4332(2)(C)(iv). The DEIS, however, fails to adequately weigh the short-term benefits of supplying timber to Ketchikan Pulp under its 50-year pulp contract, which expires by its terms in 10 years, with this project's long-term costs. The DEIS fails to adequately disclose the loss of future productivity resulting from unsustainable logging under the Ketchikan Pulp contract within the project area, including the cumulative impacts to the commercial,

SEACC-1

ALASKA SOCIETY OF AMERICAN FOREST DWELLERS, Point Baker • ALASKANS FOR JUNEAU • CHICAGO OF CONSERVATION COUNCIL, Tenaake Springs  
FRIENDS OF BERNERS BAY, Juneau • FRIENDS OF GLACIER BAY, Gustavus • LYNN CANAL CONSERVATION, Haines  
NARROWS CONSERVATION COUNCIL, Petersburg • PELICAN FORESTRY COUNCIL • PRINCE OF WALES CONSERVATION LEAGUE, Craig  
SIERRA CLUB, Juneau • SITKA CONSERVATION SOCIETY • TAKU CONSERVATION SOCIETY, Juneau • TONGASS CONSERVATION SOCIETY, Ketchikan  
WRANGELL RESOURCE COUNCIL • YAKUTAT RESOURCE CONSERVATION COUNCIL  
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## Responses to Southeast Alaska Conservation Council

- SEACC-2** Your comment supporting Alternative 1 is noted. Your comment regarding the need for a Supplemental Draft EIS is also noted. The Forest Service does not agree that a Supplemental Draft EIS is needed since public and agency comments on the Draft EIS could all be addressed and incorporated, as appropriate, into the Final EIS.
- SEACC-3** The EIS addresses the issues noted in your comment. Refer also to response to AK-2.
- SEACC-4** Refer to response to DOI-9.

recreational and subsistence uses of fish and wildlife, and the area's world-class cave and karst resources. We do not believe it good government policy or legal to treat the short-term economic benefits to Ketchikan Pulp from this proposed timber sale as more important than the long-term stability of the local communities adjacent to the project area.

**SEACC-1**

We can not support any of the alternatives proposed in this DEIS, except the no-action alternative. At a minimum, the deficiencies identified in these comments require the Forest Service to prepare a supplemental DEIS. A better approach would be to halt this project right now.

**SEACC-2**

These comments will first address the preferred alternative, Alternative 3, and then raise several other significant issues which continue to plague timber sale project planning on the Tongass. These issues include this project's purpose and need, falldown, highgrading, and failure to take steps consistent with a scientifically credible and legally sufficient forest-wide wildlife habitat conservation plan at the project level or the recommendations contained in the 1995 Anadromous Fish Habitat Assessment. Addressing these issues is critical to the sustainable use of the Tongass, and the conservation of the wildlife and fish habitat that supports important commercial, recreational, and subsistence hunting and fishing within the project area. Postponing a meaningful discussion of these issues until completion of the long overdue Tongass Land Management Plan Revision (TLMP revision) is a serious mistake. The issues are so fundamental to managing the Tongass for the long-term benefit of all forest users that they must be addressed in the development and implementation of ongoing timber sales.

**SEACC-3**

Specific Comments Regarding the Preferred Alternative, Alternative 3:

We are very pleased that the Forest Service did not include any cutting units in VCU 527 in the preferred alternative. Not only were these cutting units in the village of Port Protection's watershed but this VCU is a very important subsistence deer harvest area for residents of Port Protection and Point Baker. Moreover, the 1989-94 KPC Operating Plan identified all these units as retention, or areas that will be managed to provide old growth habitat conditions. With the lack of a credible, comprehensive forest-wide conservation plan in place to provide for healthy populations of fish and wildlife, the Forest Service should remove all areas identified as retention or extended rotation in the 1989-94 Operating Plan from this logging plan proposal. The Alaska delegation's efforts to stop any meaningful conservation efforts by the Forest Service to protect fish and wildlife for the long-term, and even preempt the Tongass Plan revision process, heightens the need for the Forest Service to maintain all management options for maintaining important habitat for fish and wildlife.

**SEACC-4**



## Responses to Southeast Alaska Conservation Council

### SEACC-5

No further logging should occur in VCU's 527, 528, 529, 530, and 532 because of the importance of this area (WAA 1529) to residents of Point Baker and Port Protection for harvesting deer. At a minimum, no logging should occur from Shine Creek, north and west of the #20 Road, including Protection Head.

**SEACC-5** Your comment was considered and is reflected, in part, under Alternative 6 of the Final EIS. In this alternative, no harvest is proposed in VCU's 527, and units between Shine Creek and Protection Head, north of the 20 Road are deferred.

### SEACC-6

In order to protect Whale Pass' residents subsistence hunting, no logging should occur on Thorne Island. This area also provides important opportunities to local residents who are developing commercial tourism and recreation businesses in this area.

**SEACC-6** Your comment opposing logging on Thorne Island is noted.

### SEACC-7

Proposals for the Calder Tie Road should be dropped from consideration in this project. Not only is this road very expensive, \$128 million dollars for construction of less than 1 mile of road (Table 3-103), but it will exacerbate competition for limited subsistence resources by opening the "back door" of the project area to vehicle access. Dropping this road is a reasonable step to minimize adverse impacts on subsistence users. There is also no justification for permanently damaging the high vulnerability karst along this road route.

**SEACC-7** Your comment was considered along with others, and is reflected under Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road. The Draft EIS incorrectly presented the cost of the road as 128MM\$, rather than 128M\$.

### SEACC-8

We are pleased to see that the preferred alternative does not log any acres on high vulnerability karst. However, these acres should be removed from the suitable timber base considered for this project because of the permanent damage to this important resource from logging or road building on these acres.

**SEACC-8** Refer to response to AK-8.

### SEACC-9

The cutting units proposed in VCUs 534.1 (units 204, 211, and 212) and 534.0 (units 225 and 226) should be dropped for several reasons. First, this units appear to be located in areas identified for extended rotation in the 1989-94 KPC Operating Plan. Secondly, unit 534.1-204 is directly adjacent to a parcel of private land. Although the DEIS fails to adequately identify who owns this private parcel, we believe Ketchikan Pulp owns it. It is completely inappropriate to use taxpayer money to build a road which will provide access for Ketchikan Pulp to develop its property. Finally, VCU 534.1 is also a traditional deer hunting area for the residents of Point Baker.

**SEACC-9** Your comment was considered along with others and is reflected, in part, in Alternative 6. Alternative 6 does not include units 534.1-204, 211, or 212, due to concerns about wildlife habitat, subsistence use, and visuals resources. These units, and the proposed access roads, are included in other alternatives. While the Forest Service is not required to construct roads for access to mining claims, it is required to allow reasonable access across roads constructed for other purposes, such as logging.

#### General Comments:

#### **A. The Purpose and Need for this Project Unlawfully Restricts the Range of Alternatives Considered in the DEIS.**

As in other EISs prepared since 1990, the primary "purpose and need" for this project is identified as "provid[ing] timber volume that will contribute to a 3-year timber supply requirement of the KPC contract...." Although the Forest Service has discretion to identify the purpose and need for a project, that discretion does not allow it to elevate supplying timber to Ketchikan Pulp under its 50-year pulp contract over its other legal obligations. This point was recently reaffirmed in Alaska Wilderness Tourism and

### SEACC-10

## SEACC-10

The Forest Service does not agree that the stated purpose and need for the project prevents the agency from 'meaningfully considering an alternative that takes reasonable steps to minimize adverse impacts upon subsistence'. Although the stated purpose and need is 85 MMBF, the action alternatives in the Draft EIS ranged in volume from 63 to 102 MMBF. Alternative 6 was developed for the Final EIS in response to public comment and subsistence testimony, and totals 40 MMBF. The alternatives span a wide range of volumes and address protection of natural resources and subsistence uses through site-specific mitigation, old growth management strategies, and alternative frameworks.

The Forest Service disagrees that the Lab Bay Draft EIS violates ANILCA, NEPA, and the TTRA. The purpose and need for the project has not prevented meaningful consideration of alternatives that take reasonable steps to minimize adverse impacts upon subsistence. The Forest Service has complied with all laws applicable to managing national forest lands.

The Forest Service also disagrees with the comment that it is incorrect in moving 'toward the desired future condition described in the TLMP Draft Revision (1991a)'. The relationship between the current Forest Plan (TLMP 1979, as amended) and the TLMP Draft Revision (1991a) is discussed in detail in Chapter 1. The text referenced in your comment has been revised for the Final EIS to clarify the priority of the current Forest Plan.

The Forest Service acknowledges that the TLMP Draft Revision (1991a) is a draft document, and notes that a new draft revision (1996 TLMP Draft Revision) is currently under public review. The letters referenced in your comment do not have direct bearing on the Lab Bay EIS, and have not been incorporated into the Planning Record. The Final EIS does incorporate resource, economic, and social information available at the time of its preparation.

*Recreation Assoc. v. Morrison*, No. 95-35222, slip op. at 8956 (9th Cir. July 24, 1995)(as amended Sept. 28, 1995):

"As the majority noted in *City of Tenakee Springs v. Franzel*, the Tongass Timber Reform Act was enacted to replace the 'contract driven planning process' with a methodology designed to ensure compliance 'with all applicable environmental laws and standards.' 960 F.2d 776, 779 (9th Cir. 1992). 'The Forest Service's management of this forest also remains subject to the requirements of NEPA, [ANILCA], and other applicable environmental laws in effect prior to the enactment of the TTRA.' *Id.*"

Because all the project alternatives in the DEIS, as constrained by efforts to meet as closely as possible the 85 mmbf timber target identified as the purpose and need for this project, result in a significant possibility of a significant restriction on subsistence uses of deer, this DEIS violates ANILCA, NEPA, and the Tongass Timber Reform Act. The purpose and need for this project prevents the Forest Service from meaningfully considering an alternative that takes reasonable steps to minimize adverse impacts upon subsistence.

This narrow range of alternatives is also unreasonable because it forces the public, and decision maker, to choose between protecting high vulnerability karst or sacrificing important fish, wildlife, and watershed resources. This is not acceptable. The Forest Service must comply with all laws applicable to managing national forest lands.

In describing the purpose and need for this project, the Forest Service also incorrectly relies on the its intention "to move toward the desired future condition described in the TLMP draft Revision (1991a) and in a manner consistent with the Management Direction/Emphasis for each Management Area in the current Forest Plan (TLMP 1979, as amended)." DEIS at p. 1-5. The 1991 draft Revision is just that -- a draft, and obsolete as well. We request that letters from Secretary Glickman, Undersecretary Lyons, and Regional Forester Janik identifying the shortcomings of Alternative P from the 1991 draft TLMP Revision be incorporated into the record.<sup>1</sup> As noted by Secretary Glickman, "Since [1991] ... we have gained additional resource, economic and social information .... This new information should be incorporated into the final plan."

<sup>1</sup>Letter from DOA Secretary Glickman to Senator Hatfield, Chairman of the Senate Committee on Appropriations (Aug. 4, 1995); Letter from DOA Undersecretary Lyons to Senator Hatfield, Chair of Senate Committee on Appropriations (July 28, 1995); Letter from Regional Forester Janik to Belinda Chase, Editor of Ketchikan Daily News (August 18, 1995); Letter from Regional Forester Janik to Senator Stevens (July 28, 1995).



## Responses to Southeast Alaska Conservation Council

### SEACC-11

Although we agree that the project area includes areas designated as LUD III and IV in the 1979 TLMP, as amended, these designations remain subject to the site-specific determinations made during project planning, in compliance with NEPA and ANILCA. See *AWRTA v. Morrison*, No. 95-35222, slip op. at 8949-50 (9th Cir. July 24, 1995) (as amended Sept. 28, 1995). Moreover, the restrictions to subsistence uses proposed in this project are inconsistent with Management Direction/Emphasis for Management Area KO1, KO2, and KO3 provided for in TLMP, as amended. The 1986 Amendment to TLMP states (p. 128-131) that:

- "Special consideration will be given to protection of subsistence uses in this management area (KO1)."
- "This VCU [KO2] is high in timber, fish, recreation, wildlife and estuarine values. The LUD III allocation is intended to allow protection and utilization of all of these values."
- "Special emphasis will be given to protection of subsistence [in Management Area KO3]."

### SEACC-12

The purpose and need for this project, as well as the range of alternatives considered in the DEIS, show that the Forest Service has elevated fulfilling the Ketchikan Pulp contract above complying with existing forest management direction and the law. Thus, the purpose and need for this project is arbitrary and capricious and violates NEPA, ANILCA, the National Forest Management Act, and the TTRA.

### SEACC-13

The range of alternatives also violates NEPA by failing to consider alternatives presented if the Forest Service canceled or terminated the Ketchikan Pulp contract, or debarred or suspended Ketchikan Pulp's operations under the contract. Under Section B0.7 of the Ketchikan Pulp contract, the Forest Service may terminate the contract "upon a determination that Purchaser's operations would cause serious environmental damage ...". The DEIS clearly discloses that Ketchikan Pulp's continued operations have and will cause serious environmental damage in this, and other project areas within Ketchikan Pulp's primary sale area. The serious cumulative impacts to fish, wildlife, water, and karst resources and significant restrictions to subsistence uses clearly qualify as "serious environmental damage." See also Section B8.222 (Offering Termination by Forest Service because Purchaser's operations would cause serious environmental damage).

### SEACC-14

The Forest Service may also terminate Ketchikan Pulp's contract under agency regulations "for serious or continued violation of [its] terms." 36 CFR 223.116(a)(1). According to provision B6.01 of the contract, Ketchikan Pulp must conduct its operations "in compliance with Federal, State, and local statutes, standards, orders, permits, or other regulations." KPC has a long history of violating its air and water permits. KPC has

**SEACC-11** All alternatives have the potential to affect subsistence resources and subsistence uses of the Lab Bay Project Area. Even the No Action alternative may affect subsistence, through cumulative effects of past harvest. Alternative 6 of the Final EIS was developed in response to public comment and subsistence testimony on the Draft EIS. This alternative avoids harvest in specific portions of Management Areas KO1 and KO3 that were identified as high value subsistence areas by local subsistence users. No harvest is proposed for Management Area KO2, which is located entirely within a LUD II. Restrictions to subsistence use are not proposed as part of this project.

Refer also to response to JK-3 for specific discussion of ANILCA Sections 802, 804, and 810.

### SEACC-12

The Forest Service does not agree with this comment. The Lab Bay project complies with forest management direction and the law. The KPC contract is only one aspect of the purpose and need; Forest Plan direction and overall timber supply are also important components.

**SEACC-13 and 14** Analysis of the effects of termination of the Ketchikan Pulp Company's contract is outside the scope of the Lab Bay Timber Sale EIS.



## Responses to Southeast Alaska Conservation Council

**SEACC-15** The analysis provided by the Forest Service in the Draft EIS is neither faulty nor incomplete. Analysis of the effects of termination of the Ketchikan Pulp Company's contract is outside the scope of the Lab Bay Timber Sale EIS.

seriously and continuously degraded the air and water in Ward Cove and the surrounding area which has resulted in significant toxic accumulations. In 1991, 1992, and 1993 KPC was either the largest or second largest toxic water polluter in the entire Pacific Northwest, including Washington, Oregon, Idaho, and Alaska. See EPA's Toxic Release Inventory Reports for 1991-1993. Most recently, Ketchikan Pulp pled guilty to criminal and civil violations of its air and water discharge permits governing operation of its pulp mill.<sup>2</sup>

Agency regulations permit the Forest Service to "debar" a purchaser for "conviction of or civil judgment for ... a commission of a criminal offense in connection with ... performing a public contract ..." or "violation of the terms of a Government contract..." See 36 CFR 223.137(a)(1)(i) and (a)(2). Both agency regulations and provisions of the Ketchikan Pulp contract also allow the Forest Service to suspend Ketchikan Pulp's operations for "commission of ... a criminal offense in connection with ... performing a public contract ..." 36 CFR 223.142(a)(1)(i), or for breach of a "material" provision of the contract, Contract Provision B9.3. According to provision B6.01 of the contract, Ketchikan Pulp must conduct its operations "in compliance with Federal, State, and local statutes, standards, orders, permits, or other regulations;" unfortunately, it has never done so.

SEACC-14

"The existence of a viable but unexamined alternative renders and environmental impact statement inadequate." *Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1994)(quotations omitted). To serve NEPA's information purposes, an EIS must give a reasoned analysis of the evidence before the agency and makes that evidence available to all concerned. The DEIS, however, fails to disclose Ketchikan Pulp's past and continued breach of the contract, the environmental consequences from these actions, or the management options thus provided the agency. This omission prevents the decision maker and public from making a reasoned and well-informed decision.

The decision by Congress to not cancel the Ketchikan Pulp contract in the TTRA does not shield the Forest Service from considering alternatives that flow from the agency's authority to terminate, debar, or suspend Ketchikan Pulp's contract operations in this DEIS. First, Section 101 of the TTRA allows the Forest Service to offer timber under the contract only subject to other applicable laws, such as Section 810 of ANILCA and NFMA, and only "to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources." Even the faulty and incomplete

SEACC-15

<sup>2</sup>See, *USA v. Ketchikan Pulp Company*, No. A95-025 CR (D. AK Mar. 6, 1995)(Criminal Plea Agreement); *USA v. Ketchikan Pulp Company*, No. A92-587-CV (JCS) (D. AK Mar. 29, 1995)(Consent Decree).

## SEACC-15

analysis contained in this DEIS demonstrates these requirements can not be met for this project area. In addition, alternatives which include termination of the contract and debarment or suspension of contract operations, must be analyzed in the DEIS for this analysis to meaningfully inform the Congress and Administration as to whether fulfilling the contract volume requirements for Ketchikan Pulp is consistent with meeting the agency's legal obligations to provide for balanced and sustainable multiple use on the Tongass. The 1992 Irland Group report, prepared for Congress pursuant to Section 301(e) of the Tongass Timber Reform Act, like the 1991 draft Revision, is outdated and fails to take into account new information now available to the agency.

**B. The Discussion in the DEIS Concerning Falldown is Exceedingly Technical, Confusing, and Poorly Written.**

The Forest Service has attempted to openly address the "falldown" issue in the Lab Bay DEIS, but as in the Polk Inlet Final EIS, the discussion is exceedingly technical and poorly written. The conclusion stated in the DEIS (p. 2-15) is most alarming:

**"The current timber supply can support the projected harvest in the Lab Bay Project Area through 2054 only if falldown and changes in land use are considerably less than estimated using currently available data and assumptions."**

This statement confirms the Forest Service knows that the scheduled acreage under Alternative P from the 1991 draft TLMP is totally unrealistic. The agency also knows that because all the new scientific information obtained on wildlife, fish, and karst since 1991 requires immediate and significant changes in land use, the current timber supply will not support the projected logging level. This statement also supports our claim that logging under the Ketchikan Pulp contract has been unsustainable.

An explanation of falldown is presented in the DEIS, but the analysis required by NEPA of the relationship between falldown and the significant issues identified in the Lab Bay Summary and DEIS is nonexistent. In particular, the absence of such analysis leaves the public guessing as to the effect of this timber sale on the area's timber supply, and accompanying social and economic impacts over the long-term.

The DEIS fails to account for the actual falldown that occurred within the project area under the 1989-94 KPC Operating Plan. The Forest Service Analysis of Falldown from 1989-94 LTS reveals that actual falldown in the 1989-94 Lab Bay project area was 22.5 mmbf. In addition, a KPC status report states that 51.4 mmbf of timber under contract in the 1989-94 Lab Bay/Whale Pass offering was deleted by the Forest Service because of a discrepancy between the amount of volume projected for logging in the area

## Responses to Southeast Alaska Conservation Council

**SEACC-16** Both falldown and interim changes in land use affect the timber harvest rates established in the Forest Plan. Because these factors occur at the Administrative Area and Forest-wide level, as well as the project level, they cannot be completely addressed within a project-level EIS. As shown in Table 3-66 of the Final EIS, the Lab Bay sale will contribute a small proportion (approximately 3 to 6 percent) of the TLMP 1979 scheduled harvest for the Project Area. Thus, the issue of timber supply across a broad regional area must be addressed at the Forest Plan level (See Appendix A).

The National forest Management Act regulations require that Forest plans be revised on a 10 to 15 year cycle to adapt to changing public views, resource uses and demand, and natural resource knowledge. The Forest planning process is used to address resource issues, land use demands, and changing land use policies. Such changes are then reflected in the acres and Allowable Sale Quantity available for harvest in the future.

The 1996 TLMP Draft Revision (USDA Forest Service 1996) addresses in detail the issues of long term timber supply, sustainability, and effects to community stability. New estimates of timber supply are included, reflecting analysis of falldown factors, changes in land use planning, and economic considerations. Specifically, the 1996 TLMP Draft Revision incorporates the Ketchikan Area update. This update reflects new information about streams, slopes, soils, and operability ratings as well as karst vulnerability ratings. New Land Use Designations and Conservation Biology Strategies are also incorporated in the 1996 TLMP Draft Revision. Future harvest projected in the 1996 TLMP Draft Revision reflects adjustments for various types of falldown factors based on recent field investigations for timber sale EIS's, including adjustments for alternative, non-clearcutting harvest methods. The 1996 TLMP Draft Revision presents the best available assessment of future timber supply for the Project Area and the Tongass National Forest as a whole. See also Appendix A.

## SEACC-16



and the amount that can actually be logged. See KPC Volume under Contract - Status Report (July, 1995). Is this 51.4 mmf in addition to the 22.5 mmf? This information should have been disclosed and discussed.

Despite information available to the agency showing that the 1991 timber base is completely unrealistic, see Supplemental DEIS for Central Prince of Wales (CPOW) Project and the Control Lake Analysis, the agency continues to rely on this information. What reasonable basis exists for this choice? Why was no information and data from a site-specific MELP analysis like that used for CPOW and Control Lake displayed or analyzed in the DEIS? This data must be disclosed and then the Forest Service must apply a reasonable falldown factor to that result.

The information disclosed in the DEIS regarding past levels of clearcutting is inconsistent and confusing. Table 3-45 shows that, of the 74,130 acres of suitable forestland contained in the project area, 26,531 acres have been clearcut. This figure is repeated in Table 3-64, which describes the suitable forestland by VCU. However, Table 3-68, which identifies the number of acres previously logged between 1940 and 1990 within the northern road system (MA K01, K02, and K03), comes up with 35,031 acres of 2nd growth! Footnote 5 to Table 3-68 further complicates matters by noting that this figure only includes areas clearcut through the end of 1989; it is estimated that logging between 1990 and 1994 is "similar to the period between 1980 and 1989." Does this mean that as many acres as were clearcut within the project area between 1980 and 1989, were cut from the area between 1990 and 1994? If so, that results in a total of 48,499 acres clearcut prior to 1995, nearly double the number of acres identified as clearcut in Table 3-45. Therefore, instead of the 38,290 acres remaining suitable old growth identified in Table 3-68, there is only 25,631 acres of suitable old growth currently available. According to the 1989-94 Record of Decision, Table 1, 7,612 acres were scheduled to be cut from the VCUs identified in Table 3-64 as part of the project area. We request that Table 3-64 be updated with the exact number of acres actually cut in each VCU under the 1989-94 operating plan and specific explanations for any discrepancy between the predicted number of acres and actual number of acres cut.

While the DEIS tries to identify and discuss the components of falldown and their magnitude, the analysis does not give any real, hard data concerning the "hard" falldown category. The Forest Service bases its "hard" falldown estimation of 15.4 percent on recent logging system and transportation plan analysis and layout of units. This is unacceptable because falldown can only be adequately determined through field verification. The Forest Service acknowledges this by stating that "most falldown is encountered during field verification." DEIS at 3-128. The Forest Service also claims that the 15.4 percent is consistent with "other falldown studies." DEIS at 3-129. What are these other studies supporting this figure? We request that the comments submitted

SEACC-16



## Responses to Southeast Alaska Conservation Council

### SEACC-16

by the Sierra Club Legal Defense Fund on the CPOW Supplemental DEIS on September 25, 1995, be incorporated into the planning record for this project.

The theme throughout the DEIS is one of minimizing "hard" falldown. Project analysis by the Central Prince of Wales planning team (CPOW) showed that over 50% of the tentatively suitable land base could not be logged, and that almost all of this was "hard" falldown. Actual implementation of CPOW has resulted in falldown of about 25 to 35%; again, almost all of this has been "hard" falldown. This actual data should have been disclosed and discussed.

By failing to refer to larger Forest planning or TLMP in defining falldown, the Forest Service obscures the connection between falldown at the project level and a realistic Allowable Sale Quantity. This connection must be clearly presented in the DEIS.

### C. The Forest Service Relied On An Arbitrary And Capricious Procedure For Calculating Proportionality For This DEIS.

In determining proportionality, the Forest Service must use timber volume, not acres, and volume must be determined based on an accurate methodology rather than the TIMTYP database. The Forest Service has failed to do so in this DEIS. The Forest Service simply states that, "Until new Forest Handbook guidelines are approved, the proportionality analysis will follow the implementation procedures originally established." DEIS at 3-113. However, the court in *The Wildlife Society, et al. v. Barton*, No. J93-001-CIV (HRH), issued an order finding that the Forest Service's decisions to use acres to determine proportionality, and to use timber-type maps to determine volume, were "arbitrary and capricious."

### SEACC-17

The documents referenced in your comment have been prepared and/or reviewed at the Regional level. Direction for conducting the Lab Bay proportionality assessments for the Draft and Final EIS's has been provided by the Regional office. Therefore, inclusion of these documents in the Lab Bay Planning Record is not necessary.

### SEACC-18

Two reports were completed and released this spring on alternative methods of determining proportionality. The first report, *Evaluation of Photo-Point Inventory Methods for the Estimation of Timber Volume and Proportionality in Southeast Alaska*, is a scientific evaluation of 4 different methods for determining proportionality. The report was completed in April of 1995. The second report, *Alternatives To Using The Timber Type Map For Determine Proportionality Under The Tongass Timber Reform Act*, is a May 23, 1995 summary of the first report, and a recommended direction for implementing Section 301(c)(2) of the Tongass Timber Reform Act on the Tongass. Comments on these reports prepared by the Alaska Chapter of The Wildlife Society were submitted on June 28, 1995 by the Sierra Club Legal Defense Fund on behalf of its clients, plaintiffs in three ongoing cases on the Tongass, including SEACC. We request that these reports and the comments by The Wildlife Society be incorporated into the planning record for the Lab Bay project.

SEACC-17 Proportionality was calculated for the Lab Bay Draft EIS using the only approved procedure available at that time. The methodology is described in Forest Handbook Supplement No. 2409.18-93-3, dated August 15, 1993. The Forest Service notes that while the court determined that the method is arbitrary and capricious, negotiations are ongoing to reach a settlement with the plaintiffs regarding the use of a new methodology. A Forest Service review of alternative methodologies led to development of a proposed transition method that uses volume (based on timber inventory statistics) rather than acres, to measure proportionality. The transition method is shown for the selected alternative in the Record of Decision.

### SEACC-18

Negotiations are ongoing to reach a settlement regarding the use of an appropriate methodology for the calculation of proportionality. Until agreement is reached on a new methodology, proportionality will be calculated for ongoing EIS projects using the current Forest Handbook procedures. The results of the transition method (described in SEACC-17, above) are shown for the selected alternative in the Record of Decision.

## Responses to Southeast Alaska Conservation Council

As stated in those comments, we agree with the first report's conclusion that "method C is probably advisable since photo measurements can be made with higher precision without substantially increasing cost." The DEIS fails to disclose the alternative methodologies or apply the best available approach, Method C, which was recommended in the first report. The Forest Service must apply the recommended alternative to the TIMTYP methodology for this sale to successfully halt highgrading as mandated by Congress in the Tongass Timber Reform Act. Achieving proportionality in the Lab Bay project area is also essential for the conservation of highly productive wildlife habitat.

SEACC-18

Additionally, in determining proportionality for volume class 6 and 7 stands, the Forest Service must separate volume class 6 and 7 stands. In this DEIS and in all past timber sales, the Forest Service has lumped the two volume classes together resulting in excessive logging in class 7 stands. Field surveys should be done to identify locations of high volume timber and verify the actual amount of volume classes 4, 5, 6, and 7 in the Lab Bay project area.

SEACC-19

A review of the proportionality analysis contained in the Lab Bay DEIS reveals that the Forest Service has failed to meet proportionality requirements under three of the five alternatives for Management Area (MA) K01, all five alternatives for MA K02, and four of the five alternatives in MA K03. The Forest Service justifies a 0.5 percent deviation from TTRA compliance by asserting that proportions can be made up in subsequent entries. However, the DEIS only claims that logging may occur in the future; it does not list specific future entries. Given the unsustainable logging within the project area noted above, there are no guarantees that future entries will occur. Therefore, it is essential that proportionality is achieved in each management area for this project.

SEACC-20

Finally, to sacrifice the commercial, recreational and subsistence use of Thorne Island by Whale Pass residents in order to "improve" the proportionality in MA K03 is boneheaded. We recommend no further cutting in this management area.

SEACC-21

### D. Where is the Wildlife Conservation Strategy for this Project?

According to the risk analysis included in the report prepared by the Interagency Viable Population Committee (VPOP Committee), viable populations on North prince of Wales Island will be in serious jeopardy if timber harvest takes place as planned under the TLMP Draft Revision (1991a). See Suring et al., 1993. The Forest Service relies on the TLMP Draft Revision (1991a) throughout the DEIS. Furthermore, the Forest Service implements the LUD strategy from the TLMP Draft Revision (1991a) as one of three habitat conservation strategies proposed in the DEIS. This scientifically indefensible and illegal habitat conservation strategy is utilized in two of the four action alternatives.

SEACC-22

**SEACC-19** The current Forest Service direction, provided by the Forest Handbook, is that high volume is represented by volume classes 6 and 7 combined.

**SEACC-20** The proportionality clause of the Tongass Timber Reform Act is intended to "eliminate the practice of harvesting a disproportionate amount of old-growth timber by limiting the volume harvested over the rotation in volume classes 6 and 7..." The intent of the Forest Service in implementing the proportionality law is to require that Management Areas be in proportion by the end of the rotation. The Forest Service allows a 0.5 percent departure from the required proportion during an individual sale offering, if there is an opportunity to achieve the required proportion through future offerings. All of the Lab Bay action alternatives move the Project Area Management Areas closer toward the base proportion. For Management Area K01 the maximum departure under the Draft EIS alternatives is only 0.27 percent. Table 3-61 in the Draft EIS shows the number of acres that would need to be harvested in order to return to the required proportion. This table has been revised for the Final EIS to include Alternative 6.

**SEACC-21** Your comment recommending no further harvest in K03 is noted. K03 is comprised largely of lands in the Timber Production and Modified Landscape LUD's, and thus is an important area for current and future timber harvest. In response to your comment and others regarding possible negative effects of harvest on tourism, subsistence use, and other resources in Management Area K03, Alternative 6 was designed. Alternative 6 addressed subsistence and visual concerns and resulted in a lower volume of harvest in Management Area K03 than Alternative 3, through fewer harvest units and implementation of an Uneven-Aged Management Plan for Thorne Island.

**SEACC-22** The VPOP Committee draft recommendations have not been accepted by the Forest Service. Therefore, several strategies were assessed for the Lab Bay Project Area, which incorporate the VPOP recommendations to varying degrees. The assessment of population viability is an ongoing science, which the Forest Service is continuing to evaluate and will address in the TLMP Revision.

Alternatives 3, 4, and 6 minimize fragmentation and road construction within large, contiguous blocks of old growth and Alternatives 4 and 6



## Responses to Southeast Alaska Conservation Council

In designing alternatives for consideration, all of the immediate interim actions recommended by the VPOP Committee, in response to the scientific peer review of the VPOP Committee's proposed wildlife conservation strategy, must be included to maintain options for conserving healthy wildlife populations pending completion of the TLMP Revision. Among the immediate actions recommended by the VPOP Committee were expanding proposed "large" and "medium" Habitat Conservation Areas (HCA), prohibiting logging and road building in volume class 6 and 7 old-growth forest occurring below 800 feet in elevation, and connecting HCAs with habitat corridors that are off-limits to logging. The VPOP Committee also recommended establishing "small" HCAs in each large watershed on a project basis.

It is crucial to note that the Draft Environmental Assessment for Adopting Interim Habitat Management Guidelines for Maintaining Well-Distributed Wildlife Populations within the Tongass National Forest (Draft EA), which the Forest Service utilizes as a proposed conservation strategy in preferred Alternative 3, does not provide for implementation of the immediate actions recommended for habitat protection. We also note that the draft EA also failed to disclose or analyze the merits of those recommendations. Specific shortcomings in the draft EA approach include: (1) the absence of wildlife corridors and matrix management prescriptions to ensure connectivity; (2) the failure to require that high-quality old-growth forest be included in HCAs; (3) permitting salvage sales within HCAs; (4) failing to actually allocate any lands for "large" and "medium" HCAs; and (5) the failure to provide for adequate habitat protection around goshawk nests located in 1994.

In particular, both the VPOP Committee and the peer review response strongly recommend corridors for the successful dispersal of wildlife species throughout the landscape. The Forest Service asserts that "identification of travel corridors . . . [is] critical in maintaining an old-growth habitat link between the largest tracts of contiguous old growth and the shorelines." DEIS at 3-190. Yet, only Alternative 4 prescribes corridors. In addition, these corridors were placed on extremely steep gradients and in areas where there is virtually no old-growth remaining and extensive roads occur. How can such corridors be effective.

The Forest Service failed to adopt any of the VPOP Committee's recommendations in Alternatives 2 and 5 and only a few of the recommendations in Alternatives 3 and 4. This is absurd. The VPOP Committee, the peer review response, and the Draft EA, conclude that current practices are insufficient to maintain viable populations of wildlife. Implementing some of the VPOP Committee's recommendations, as modified by the peer review, is simply not enough; all of the recommended actions must be included in each of the alternatives considered in the DEIS to ensure a successful viable wildlife population management strategy. As explained in the Petition and Request for Stay filed

**SEACC-22** would maintain corridors between these blocks. Alternative 6 is consistent with the VPOP Committee draft recommendations and the old growth strategy proposal in the 1996 TLMP Draft Revision preferred alternative.

**SEACC-23** Refer to response to SEACC-22.

**SEACC-24** Travel corridors would be retained under every alternative through no-harvest LUD's, such as beach and estuary buffers and stream buffers. In addition, Alternatives 4 and 6 include Project-designated travel corridors. Under these alternatives, the corridors would provide the most reasonable and realistic east-west linkages between Project-designated large, contiguous old growth blocks where existing topography, previously harvested areas, natural fragmentation, and the north-south configuration of drainages within the Project Area had to be considered.

**SEACC-25** Refer to response to SEACC-22.

**SEACC-22**

**SEACC-23**

**SEACC-24**

**SEACC-25**



## Responses to Southeast Alaska Conservation Council

**SEACC-26** All alternatives, including the No Action alternative, may affect some subsistence activities, due primarily to cumulative effects of past harvest. The analysis clearly presents the range of effects of the alternatives upon the communities likely to be affected. Section 810 of ANILCA provides for an extensive review of any action on federal lands which may adversely affect subsistence uses, but allows such actions to take place if (1) proper notice is given to State agencies, local communities, and other pertinent bodies; (2) hearings in the vicinity of the area involved are conducted; and (3) such an action is determined necessary, consistent with sound management principles for the utilization of public lands, will involve the minimal amount of public lands necessary to accomplish the proposed action, and reasonable steps will be taken to minimize the adverse impacts upon subsistence uses and resources resulting from the proposed action.

It is currently the Federal Subsistence Board's responsibility to manage subsistence resources on federal land. Recently, based on the advice of Southeast Alaska Regional Subsistence Advisory Council which represents local subsistence users, the Federal Subsistence Board allowed the harvesting of does in addition to bucks after October 1st in the Lab Bay Project Area. This indicates that presently the deer population is adequate to supply subsistence users.

Your statements regarding supply of animals for subsistence users are based on information obtained from the interagency habitat capability models. It should be noted that habitat capability models are not intended to predict population levels or set bag limits. Their use is intended to give a relative comparison between alternatives of the affect on habitat, not make projections of actual animal numbers. For this reason the 1996 TLMP Draft Revision no longer uses habitat capability models for any species except for deer, and that model has been revised (See Appendix P). There is a very high risk associated with using these models to predict population availability for subsistence users, rather than as a relative indicator of risks. The current mechanism for managing subsistence resources is through the Federal Subsistence Board which looks at input from subsistence users, past harvest levels, hunter success rates and other information including habitat capability models in making their determinations.

**SEACC-27** The conservation assessment was not available prior to the printing of the Draft EIS. This information has been incorporated into the Wildlife section of the Final EIS.

by the Alaska Rainforest Campaign with Regional Forester Phil Janik on June 24, 1994, proceeding with logging without fully implementing the VPOP Committee's viability strategy would be scientifically indefensible and illegal.

Finally, the Forest Service must do more than merely maintain viable populations of wildlife. ANILCA requires the agency to maintain healthy populations of subsistence species. See 16 U.S.C. Sec. 3112(1). Accordingly, the alternatives considered in the DEIS must provide for healthy, harvestable populations of subsistence fish and wildlife resources. Since all the Wildlife Analysis Areas in the project area presently fail to meet ADF&G deer population goals, any of the logging proposed in these alternatives will only exacerbate the situation.

We are surprised that the most recent information relating to wolves in the project area was apparently not incorporated into the planning record or disclosed in the DEIS. Your attention is directed to Kirchhoff, Person, et al., *The Alexander Archipelago Wolf -- A Conservation Assessment* (7/6/95 Review Draft): "Given the amount of roading and loss of quality habitat for the wolf's primary prey, deer, resulting from any of the alternatives considered in the DEIS, the Forest Service if failing to take a proactive approach to insuring this species remains at healthy population levels. The Forest Service should use its management discretion and authority to enforce the laws applicable to national forest management. It has been the agency's failure to do so, which has forced the taking of drastic and expensive conservation management actions under the Endangered Species Act, and resulted in severe economic and social disruptions to local communities.

**E. The DEIS Fails To Disclose Or Follow Recommended Measures To Adequately Conserve Fish Species In The Project Area.**

The Forest Service concludes its analysis of impacts to fish resources by stating that "Forest-wide standards and guidelines and Best Management Practices (BMPs) for fish, riparian, soil and water resources were specified for each proposed road and harvest unit. . . these measures are designed to prevent degradation of fish habitat, and effective and consistent application of these measures will prevent any significant decrease in fish habitat capability." DEIS at 3-88. But, the Forest Service's own report to Congress, *The Anadromous Fish Habitat Assessment* (AFHA), concluded that current protective measures are "not fully effective" to protect fish habitat from the impacts of logging, and recommends that additional protective measures be taken. Without disclosing and discussing the AFHA findings, the Forest Service can not take the hard look required at the environmental consequences from the proposed project on streams and watersheds in the project area. In addition, it significantly impedes informed public participation in the decision-making process.

**SEACC-26**

**SEACC-27**

**SEACC-28**



## Responses to Southeast Alaska Conservation Council

**SEACC-28** Harvest units and roads proposed for the Lab Bay sale were field-verified by resource specialists including fisheries biologists, hydrologist/soil scientists, and wildlife biologists. Resource specialists designated sites for implementation of required mitigation measures, such as TTRA buffers and BMP's directed by Forest-wide Standards and Guidelines. Resource specialists were also given the authority to recommend additional mitigation measures as appropriate to the site. These included measures such as: extending TTRA no-harvest buffers to include adjacent floodplains, muskegs, or forested habitats for protection of wildlife/fisheries/water quality; specifying selective harvest or individual tree harvest buffers to reduce blowdown potential and for protection of fisheries/water quality; and specifying split-yrading and/or full suspension on Class III streams and V-notches as appropriate to protect water quality. These mitigation measures go beyond the minimum requirements of the Forest Plan, and offer increased protection of fisheries and water quality resources based on the resource specialist's assessment of site-specific conditions (refer to Planning Record of the EIS for the Unit Design Cards).

The site-specific mitigation measures applied to the Lab Bay units are in accordance with the increased mitigation measures recommended in the AFHA Report. The Report does not recommend adoption of every element of the PACFISH management strategy, but does recommend increased protection through implementation of mitigation such as: increased buffers on Class I and II streams to include adjacent floodplain and wetland fens; and special consideration of Class IV stream channels (to include ephemeral streams and V-notches). The site-specific mitigation measures applied to Lab Bay units are also in accordance with ACMP and FPA requirements to protect important fish and wildlife habitat within 300 feet of a fish stream. Therefore, we believe the mitigation measures specified in the Lab Bay Unit Design Cards are consistent with state and federal law and policy, and will protect fisheries, water quality, and wildlife resources. Resource specialists will have the opportunity to verify mitigation measures and unit design at the time of final layout. Should federal or state law, or Forest Service Standards and Guidelines change prior to implementation of the sale, adjustments to unit and buffer design could be accomplished during final layout.

by the Alaska Rainforest Campaign with Regional Forester Phil Janik on June 24, 1994, proceeding with logging without fully implementing the VPOP Committee's viability strategy would be scientifically indefensible and illegal.

Finally, the Forest Service must do more than merely maintain viable populations of wildlife. ANILCA requires the agency to maintain healthy populations of subsistence species. See 16 U.S.C. Sec. 3112(1). Accordingly, the alternatives considered in the DEIS must provide for healthy, harvestable populations of subsistence fish and wildlife resources. Since all the Wildlife Analysis Areas in the project area presently fail to meet ADF&G deer population goals, any of the logging proposed in these alternatives will only exacerbate the situation.

**SEACC-26**

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**SEACC-27**

**E. The DEIS Falls To Disclose Or Follow Recommended Measures To Adequately Conserve Fish Species In The Project Area.**

The Forest Service concludes its analysis of impacts to fish resources by stating that "Forest-wide standards and guidelines and Best Management Practices (BMPs) for fish, riparian, soil and water resources were specified for each proposed road and harvest unit. . . these measures are designed to prevent degradation of fish habitat, and effective and consistent application of these measures will prevent any significant decrease in fish habitat capability." DEIS at 3-88. But, the Forest Service's own report to Congress, The Anadromous Fish Habitat Assessment (AFHA), concluded that current protective measures are "not fully effective" to protect fish habitat from the impacts of logging, and recommends that additional protective measures be taken. Without disclosing and discussing the AFHA findings, the Forest Service can not take the hard look required at the environmental consequences from the proposed project on streams and watersheds in the project area. In addition, it significantly impedes informed public participation in the decision-making process.

**SEACC-28**



## Responses to Southeast Alaska Conservation Council

SEACC comments on Lab Bay DEIS  
September 30, 1995  
Page - 13

As part of the AFHA analysis, the Forest Service reviewed the PACFISH management strategy for protecting anadromous fish habitat in the Pacific Northwest and found many similarities. This led these experts to conclude that current protective measures implemented on the Tongass were not effective. This is not surprising because the strategies developed in PACFISH were intended for application in Alaska from the very beginning. (Forest Service public meeting, Petersburg AK, June 28, 1995). Thus, the PACFISH management strategy must be incorporated into the alternatives considered, as it represents the best scientific information presently available on how to protect anadromous fish habitat.

### SEACC-28

**SEACC-29** The Forest Service disagrees with your statement that "AFHA has established that the 100-foot riparian buffers...do not adequately protect fish on the Tongass." This is an extreme generalization of the results of the AFHA report, taken out of accurate context. The Forest Service also disagrees with your statement that "full implementation of habitat modification measures consistent with the PACFISH strategy" is called for.

As detailed in response to SEACC-28, above, the Lab Bay proposed harvest units were designed by resource specialists using site-specific information. Numerous specific mitigation measures were applied, as described in the unit cards (Planning Record). The EIS proposes management of riparian zones consistent with Federal and State regulations and Forest Service standards and guidelines.

**SEACC-30** The bulk of the Lab Bay analysis was done in 1992 and 1993, prior to issuance of the federal agency guide for watershed analysis (1994). Third and fourth order watersheds where harvest is proposed were analyzed using the methods of Hogan and Wilford (1989). In addition, no harvest is proposed in any watershed where more than 35 percent has been cut in the past 15 years, and a cumulative watershed effects analysis would not be required under Forest Plan standards and guidelines. Of the five watersheds mentioned in this comment (A22A, A30B, A31C & AK4A, B30A), none has had more than 35 percent of the watershed harvested in total and none has had more than 20 percent harvested in the past 15 years. See the Soil and Water Resource Report (Metzler 1993) Table V-12 for cumulative timber harvest within each watershed in the Project Area. None of the proposed alternatives would harvest more than 16 percent of these watersheds.

Also, please refer to DOI-12 and SEACC-28 above, regarding recommendations presented in the AFHA.

Each watershed proposed for harvest under the Lab Bay sale was reviewed to determine the extent of past harvest and road building; extent of high and very high MMI soils; riparian resources; and fisheries concerns including passage, temperature sensitivity, and access. The level of proposed harvest and specific harvest unit prescriptions and mitigation measures take into account existing watershed conditions as well as site-specific conditions within and adjacent to the units. The planning of the Lab Bay sale, including watersheds selected for harvest, type and extent of harvest within a watershed, and specific unit prescriptions for harvest types and stream buffers, incorporated the primary elements of watershed analysis recommended in the AFHA Report.

NFMA explicitly states that the Forest Service must "insure" that logging on the Tongass does not "seriously and adversely affect water conditions or fish habitat." 16 U.S.C. Sec. 1604(g)(30)(E)(iii). AFHA has established that the 100-foot riparian buffers, the minimum required under the TTRA, do not adequately protect fish on the Tongass. Accordingly, NFMA compels the full implementation of habitat modification measures consistent with the PACFISH strategy to ensure that sufficient riparian habitat is maintained during and after logging operations.

In conjunction with NFMA, the Forest Service must also meet the requirements of the Alaska Coastal Management Plan (ACMP) which requires that fish and wildlife protection on federal lands be no less than that provided on state lands. Under the state Forest Practices Act (FPA), which is incorporated into the ACMP, there can be no degradation of important fish and wildlife habitat within 300 feet of a fish stream. Thus, the Forest Service has a legal obligation to manage riparian zones consistent with the ACMP and FPA, and the alternatives considered for this project should be developed accordingly.

It appears that the Harza did not conduct any watershed analysis for this DEIS other than applying an indiscriminate "no more than 35 percent standard" contained in current forest-wide standards and guidelines. The AFHA recommended immediately implementing watershed analysis using the concepts presented in A Federal Agency Guide for Pilot Watershed Analysis (1994) before implementing logging or roading activities that could significantly influence fish habitat. See AFHA, Appendix C, at 39. Please provide a reasoned comparison of the procedures used in the watershed analyses for this DEIS and recommended by AFHA with a reasoned explanation for the choice made. This issue is particularly troublesome with this proposed project because of the level of development which has already occurred in several watersheds and the increased disturbance proposed in this project, including Baker (A22A), Big Creek (A30B & A31C), Watershed AK4A (west side of Exchange Cove), and Watershed B30A (northwest portion of Thorne Island).

### SEACC-30

### SEACC-29



## Responses to Southeast Alaska Conservation Council

Finally, Tables 3-20 and 3-21 in the DEIS identify the location of roads and cutting units "with High Potential for Direct Sediment Delivery to a Class I Stream." The experts who prepared the AFHA, however, "recommended that timber harvest and roading activities on potentially unstable slopes be reduced or eliminated." We recommend that all the identified units and roads be deleted from consideration for this project.

SEACC-31

As Yogi Berra once said, "this seems like deja vu all over again." We remember in 1989 when the Forest Service decided not to follow the expert recommendations from the National Marine Fisheries Service when selecting between alternative riparian management strategies for the long-term protection of salmon and resident fish habitat. The Alaska Federal District Court subsequently found that decision to be arbitrary and capricious and enjoined logging within 100 feet of all Class I and II streams in the project area. The Forest Service should do the right thing now and implement the recommendations in the AFHA report without delay in this, and other ongoing timber sale projects.

SEACC-32

F. The Proposed ANILCA Findings Are Arbitrary and Capricious.

First off, the standard used by the Forest Service is unlawful. A finding that proposed activities "may" restrict subsistence is what the law requires. The heightened standard used by the Forest Service, "a significant possibility of a significant restriction," is contrary to court rulings and Congressional intent. Although the heightened standard makes no meaningful difference with respect to deer, it may effect findings regarding other fish and wildlife species, such as salmon. The Anadromous Fish Habitat Assessment found that "procedures similar to those currently used to protect fish habitat on the Tongass ... failed to prevent declines in fish habitat capability, and resulted in increasing and now significant risk to the viability of salmon and steelhead stocks ...." See AFHA at p. 7. Because the DEIS failed to disclose and analyze the finding in this important report, the Forest Service failed to provide a reasoned explanation for its finding that "Based on the implementation of site-specific prescriptions for protecting salmon spawning and rearing habitat, the analysis projects that the immediate and foreseeable effects on the abundance and distribution of salmon for subsistence uses in the Project Area would be insignificant."

SEACC-33

The DEIS's finding that the significant possibility of a significant restriction of deer is necessary because "[t]here is no alternative that would meet KPC contract requirements and TLMP objectives" is arbitrary and capricious. As noted above, the Ninth Circuit has found that the TTRA was enacted to replace the "contract driven planning process" relied upon to justify significant restrictions to subsistence harvest of deer in this project.

SEACC-34

Moreover, the 1979 TLMP did not consider impacts to subsistence because at the time it was released Section 810 of ANILCA had not been enacted as law. Tying to a plan that

SEACC-35

SEACC-31 The Forest Service disagrees with your statement that the 'experts who prepared the AFHA, however, "recommended that timber harvest and roading activities on potentially unstable slopes be reduced or eliminated"' The AFHA report does not call for removing all high MMI soil areas from the suitable timber base, but does call for individual site assessment. The Lab Bay units and roads located on high MMI soils were reviewed on the ground by a hydrologist/soil scientist.

Refer to Response to AK-27.

SEACC-32 Refer to responses to DOI-12 and SEACC-28 for description of implementation of AFHA recommendations on the Lab Bay Project.

SEACC-33 The Forest Service disagrees with your characterization of ANILCA 810 requirements. The "significant possibility of a significant restriction" standard is quite consistent with current court interpretations of ANILCA 810.

Regarding potential effects to fisheries resources, the Forest Service used site-specific information to design harvest units. Mitigation for fisheries and water quality was applied on a site-specific basis, consistent with current standards and guidelines, federal and state law, and recommendations of the AFHA report. Refer to response to SEACC-28 for a more detailed description of the planning process.

SEACC-34 The Forest Service does not agree with your comment. Timber harvest proposed under the Lab Bay EIS is necessary, in part, to comply with the terms of the KPC Long-Term Contract. The EIS proposes timber harvest in compliance with federal and state laws, including NEPA, ANILCA, and TTRA.

## Responses to Southeast Alaska Conservation Council

**SEACC-35** The Forest Service does not agree with your comment. Timber harvest proposed under the Lab Bay EIS is necessary, in part, to comply with the terms of the KPC Long-Term Contract. The EIS proposes timber harvest in compliance with federal and state laws, including NEPA, ANILCA, and TTRA.

Refer also to response to JK-3.

ignores subsistence to justify restrictions to subsistence can only be described as bullheaded. Moreover, the Tongass Timber Reform Act did not direct the Forest Service to meet market demand for timber no matter what the costs to other resources and their users, but only to the extent that it can do so consistent with multiple use objectives and sustained yield, and only to the extent it can do so within the confines of all "other applicable law," including Section 810 of ANILCA. Consequently, the Forest Service can no longer elevate Ketchikan Pulp logging, under an outdated forest plan, over other statutory requirements.

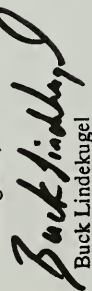
**SEACC-35**

### Conclusion

Well it certainly appears that as long as the Ketchikan Pulp contract is in place, the goal of balanced multiple use sought by Congress when it passed the Tongass Reform Law in 1990 will remain unachieved. Five years after Congress eliminated the Forest Service's "timber-first" bias towards Tongass management, this project reveals how far the Forest Service must still go to begin managing the Tongass for the benefit of all forest users.

Thank you for considering these comments.

Best Regards,

  
Buck Lindenkugel

Conservation Director



Summer Strait Advisory Committee BAY EIS  
P.O. Box 48  
Point Baker, Alaska 99927  
PLANNING RECORD  
REC'D: 8/1/95  
FOLDER: 021

Forest Supervisor  
Ketchikan Area-Tongass Nat'l Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan, Alaska 99901

Dear Mr. Vaught,

September 27, 1995

The Summer Strait Advisory Committee met on September 16, 1995 to consider and develop a response to the Lab Bay Project Area Draft Environmental Impact Statement. The following is our response.

The Advisory Committee looked long and hard at all the units proposed for cutting in Preferred Alternative 3, and compared them to others in the cutting pool which are not in Alternative 3, to see if we could trade units 257, 259, 270 and 285 in VCU 529 for units further from the villages of Point Baker and Port Protection. We found, however, that there were no units that were acceptable. Every proposed cutting unit in this plan will destroy more habitat in an already over-harvested area. None of it is acceptable. For this reason, the SSAC can only support the No Action Alternative. We have compromised all that we can.

The Preferred Alternative will result in restrictions on deer hunting, and may restrict subsistence bear hunting also. Even with No Action our deer population is in trouble. There is no documentation in the EIS showing that any further loss of habitat is "necessary and consistent with sound management principles for the utilization of public lands." The only way to mitigate the negative impact which past logging has had on our subsistence deer is by habitat protection, according to the EIS. The No Action Alternative provides this habitat protection. It is our duty as the local guardians of subsistence to support this alternative.

Other local values are also at risk if any further logging occurs in this area. Any further degradation of habitat around Red Bay Lake and drainages, or Salmon Bay Lake and drainages is unacceptable because of their importance to commercial, sport and subsistence fishing. Any further loss of habitat for marbled murrelet and other old-growth dependent bird populations is unacceptable. Any further damage to the world-class cave system, whose relation to healthy fish populations and healthy surface soil conditions is just beginning to be explored, is unacceptable. Any further negative impacts on our communities stability, on our subsistence way of life or on our socioeconomic profile is unacceptable.

We do not believe that it is in the best interest of the public, which owns the forest, to continue logging in this area. We urge you to consider all that we have already lost and its effects on our subsistence and other socioeconomic factors, and to do no further timber harvest in the area covered in this EIS. Thanks for your time and consideration.

Sincerely,

*David Hornsby*  
Chairman

## Responses to Summer Strait Advisory Committee

### SSAC-1

Your comment regarding specific units in the vicinity Port Protection and Point Baker was considered. Alternative 6 of the Final EIS defers harvest on those units and others between Shine Creek and Point Baker, north of the 20 Road. Rather than substituting other units, Alternative 6 proposes to harvest a lower volume than the other action alternatives.

### SSAC-2

Your comment in support of the No Action Alternative is noted.

### SSAC-3

Under Alternative 6 of the Final EIS, no harvest is proposed in close proximity to Red Lake or Salmon Bay Lake. The area around Salmon Bay Lake is protected from future harvest due to its LUD II status.

Assessment of the effects of harvest on marbled murrelets and other old-growth dependent bird species is addressed under the TES and Wildlife sections in the Environmental Consequences.

Alternative 6 of the Final EIS defers all harvest on high vulnerability karst and implements draft standards and guidelines for the protection of karst resources.

### SSAC-4

Your comment recommending no further harvest in the Project Area is noted.

### SSAC-1

### SSAC-2

### SSAC-3

### SSAC-4





## TONGASS CAVE PROJECT

A PROJECT OF THE NATIONAL SPELEOLOGICAL SOCIETY

P.O. Box 84493  
Fairbanks, AK 99708  
September 28, 1995

Forest Supervisor  
Ketchikan Administrative Area  
Tongass National Forest  
Federal Building  
Ketchikan, AK 99901

Gentlefolk

The following are my comments for the Tongass Cave Project on the Lab Bay Project Draft EIS

The karstlands of North Prince of Wales Island are among the finest examples of temperate rainforest karst ecosystems in the world. Nowhere with the possible exception of other parts of the Tongass, are such dramatic landforms located in areas bearing any semblance of their original undisturbed state. Although other parts of the Tongass may possess similar landforms in an undisturbed state, it is North Prince of Wales Island that contains the largest, most dramatic extent of temperate rainforest karst in the world. It is important to remember that it is the karst ecosystem in its entirety rather than just a series of dramatic surface features that is important. It is with this knowledge that I have written these comments

I am sorry to see that once again the Forest Service has failed to provide an alternative that attempts to truly protect more than one resource at a time. We are asked to either protect karst resources and sacrifice fish and wildlife resources (the loss of which will have unknown effects on adjoining karstlands), maintain a modicum of wildlife habitat at the expense of karst, plunder both of these resources for maximum timber harvest, or completely ignore the needs of timber users and producers and harvest nothing.

IT IS CLEAR FROM THE ANALYSIS THAT THE LAB BAY PROJECT AREA HAS ALREADY BEEN HARVESTED TO THE POINT THAT ANY OF THE ALTERNATIVES THAT ATTEMPT TO COME CLOSE TO THE PROPOSED HARVEST LEVEL OF 85 MMBF WILL HAVE DIRE CONSEQUENCES FOR WILDLIFE AND WILL VIRTUALLY ELIMINATE ALL ROADLESS AREAS ON THE NORTH END OF PRINCE OF WALES ISLAND. IN ADDITION, ALL OF THE ACTION ALTERNATIVES WITH THE EXCEPTION OF 3 COULD HAVE MAJOR NEGATIVE IMPACTS ON THE KARST

## Responses to Tongass Cave Project

### TCP-1

The timber harvest alternatives were formulated by an interdisciplinary team which considered all the resources. Alternative 6 of the Final EIS was developed in response to public comments on the Draft EIS alternatives. Each alternative meets or exceeds the Forest Plan's standards and guidelines which serve to minimize or avoid adverse impacts to all resources.

### TCP-2

Your comment opposing all action alternatives is noted.

## Responses to Tongass Cave Project

### TCP-2

ECOSYSTEM. A SYSTEM THAT HAS ALREADY BEEN SERIOUSLY DISRUPTED DURING PAST HARVEST ACTIVITIES IN THE PROJECT AREA. THIS IS TOTALLY UNACCEPTABLE.

### TCP-3

Some of the ideas proposed have merit. For instance, THE IDEA OF HELICOPTER LOGGING SELECTED SMALL UNITS IS AN IDEA THAT SHOULD HAVE BEEN IMPLEMENTED LONG AGO in order to reduce the roads on POW while also perhaps reducing the effects of timber harvest on wildlife. This plan should in all the harvest alternatives that would affect Thorne Island it is the only remotely acceptable method for harvesting timber on Thorne Island. an area of great importance to subsistence users.

### TCP-4

The assertion (DEIS, 3-316) that reductions in the availability of black bear and deer for subsistence use is due to cumulative effects of past actions is, of course, true. However, the DEIS fails to incorporate the other parts of the story following the same reasoning, it is clear that THE CUMULATIVE EFFECTS OF PAST HARVEST ON WILDLIFE WILL BE EXACERBATED IF THE PROPOSED ACTION OCCURS. ADDITIONALLY, ANY EFFECTS OF PAST HARVEST ON KARST WILL BE EXACERBATED BY FUTURE HARVEST RELATED ACTIVITIES ON KARST. These are extremely important omissions. The situation on North Prince of Wales Island is already very bad and will be untenable if any of the proposed harvest alternatives are implemented

### TCP-5

The inclusion of an alternative that allows no harvest on high vulnerability karst is, on the surface, appealing. However, harvest on high vulnerability karst should be considered to be a similar situation to harvest on soils with high potential for mass movement. There should never be harvest in either of these areas because they will be permanently damaged by it. Rather, HIGH VULNERABILITY KARST, LIKE AREAS WITH HIGH POTENTIAL FOR MASS MOVEMENT, SHOULD BE PERMANENTLY REMOVED FROM THE TIMBER BASE. To force the public to make a choice of either not harvesting on high vulnerability karst areas and sacrificing many wildlife values, or meeting some of the wildlife and subsistence needs, but permanently damaging unique and fragile karst ecosystems is not sensible. ONCE HIGH VULNERABILITY KARST HAS BEEN REMOVED FROM THE TIMBER BASE AND THE RESULTING FALLDOWN TAKEN INTO ACCOUNT, THEN A MORE REALISTIC HARVEST PLAN CAN BE DEVELOPED.

### TCP-6

Another aspect of the Lab Bay Project Plan that is of particular concern is the proposed connection between Calder Bay and Lab Bay with 1/8 mile of the road over high vulnerability karst. Past experience suggests that to effectively mitigate effects on the high vulnerability karst is extremely difficult or impossible and may significantly increase the estimated cost of this connecting link. The road is a flagrant waste of taxpayer money with

### TCP-3

Your comment supporting helicopter-logging of small units is noted. Helicopter yarding has been incorporated into unit design based on cost and other feasibility elements. Alternative 6 of the Final EIS proposes helicopter yarding as part of the Uneven-Aged Management Plan for Thorne Island.

### TCP-4

Effects of past harvest on wildlife is primarily addressed through the use of Management Indicator Species (MIS). These species have been modeled to estimate long-term changes in habitat capability. Habitat capability has been assessed for 1954, 1995, each alternative, 2004, and 2054. This information is provided in the Affected Environment and the Environmental Consequences of the Wildlife section.

Discussion of cumulative effects to karst is presented in Chapter 3, Geology, Minerals and Karst section.

### TCP-5

Removal of high vulnerability karst areas from the suitable base is outside the scope of this EIS. The 1996 TLMP Revision addresses the protection of karst resources Forest-wide.

### TCP-6

Your comment was considered along with others, and is reflected under Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road. The Tie Road, as proposed, would not affect high vulnerability karst. The Final EIS has been revised to show the correct cost as \$128,000.



## Responses to Tongass Cave Project

### TCP-7

Alternatives 3 and 6 emphasize protection of high vulnerability karst resources. No harvest or road construction would occur on high vulnerability karst. Under Alternative 6, harvest would occur on three units that include isolated areas of moderately developed karst features, and appropriate mitigation is recommended as defined by the Draft Karst and Cave Resource Management Forest-wide Standards and Guidelines (USDA Forest Service 1994a).

These Draft Standards and Guidelines will be finalized through the Forest Plan Revision process. This Project is consistent with the most stringent standards and guidelines proposed in the 1996 TLMP Draft Revision.

### TCP-6

many terrible results for wildlife, needless loss of roadless areas and large habitat blocks, and deleterious effects on karsted areas. Not only will the short segment of road intrude into the south Perue Peak roadless area, but the net effect of such a connection will open up many miles of old roads effectively closed by nature both north and south of the connection. Need I say that \$128,000,000 will buy an awful lot of barge time to transport heavy equipment into the area, which already is well supplied with water access to the road system. Access by road for heavy equipment and reduction of travel time from Lab Bay to Calder Bay were the only two real reasons given in support of this idea. It is absurd to cite reduction in travel time from a no longer existing community as a reason for building such a connection. NO MATTER WHAT PLAN IS CHOSEN, THE CONNECTION BETWEEN LAB BAY AND CALDER BAY SHOULD NOT BE INCLUDED

### TCP-7

On 3-384, the DEIS states that "The loss of cave resources resulting from road or quarry construction and timber harvesting may result from the implementation of alternatives 2, 4, and 5. Draft Karst and Cave Resource Management Forest-wide standards and guidelines, established survey methodology, karst vulnerability assessment, and mitigation measures specified in this document provide reasonable assurance that there would be no irreversible loss of cave resources." However, it is also stated that all of these alternatives propose to harvest significant numbers of acres on high vulnerability karst lands. THE STANDARDS AND GUIDELINES CITED IN THE DEIS STATE (p12) THAT ON HIGH VULNERABILITY KARSTLANDS "TIMBER MANAGEMENT AND RELATED ACTIVITIES SHOULD BE EXCLUDED .... except that small expanses of these areas may be crossed by roads to access areas where harvest is appropriate. This would only be allowed if no other route or option was available and karst resource values would not be compromised." It appears to me that EITHER THE FOREST SERVICE IS PLANNING TO VIOLATE THE STANDARDS AND GUIDELINES BY HARVESTING HIGH VULNERABILITY KARST AREAS WITH CONSEQUENT ILLEGAL AND IRREVERSIBLE DAMAGE TO THE KARST AND CAVE SYSTEMS BELOW, OR THAT IT HAS GREATLY OVERESTIMATED THE POTENTIAL HARVEST IN ALTERNATIVE 2, 4, AND 5. If the first option is the case, then there are blatant falsehoods in the DEIS. If the second is the case, it has the net effect of misleading the public, causing those who wish to protect karst to support the "no harvest on karst alternative" and sacrifice wildlife and subsistence values for no real reason and causing those who wish to harvest maximal amounts of timber to support alternatives that cannot possibly provide the volumes suggested

### TCP-8

The assertion that "all alternatives would provide the fish and wildlife habitat necessary to contribute to the maintenance of viable, well-



## Responses to Tongass Cave Project

### TCP-8

The Forest Service maintains that each of the alternatives would provide the fish and wildlife habitat necessary to contribute to the maintenance of viable, well-distributed populations of existing native and desired nonnative vertebrate species, consistent with multiple use objectives. Alternative 6 is consistent with the old growth strategy recommended by the VPOP Committee and with the strategy proposed in the 1996 TLMP Draft Revision.

Gray wolf is a species of concern, and several sources of information were reviewed in preparation of the EIS. Population effects are estimated through use of habitat capability models; the wolf model depends primarily upon deer populations.

Wolves on Prince of Wales Island are currently being studied by Dave Person, a University of Alaska graduate student, to determine habitat use and stability of populations on Prince of Wales Island. A summary of his results are presented in Chapter 3 of the Final EIS in the Wildlife section.

### TCP-9

The relationship between long-term declines in employment opportunities in the fishing, guiding, tourism, and recreational support industries as a result of timber harvest has not been determined in studies. There are many economic factors, such as interest rates and the national economy, that can cause increases and decreases in employment within various industries. The effects of timber harvest on the recreation and fishing industries, and on non-market values has been included in the Final EIS. The 1996 TLMP Draft Revision projects that, under the preferred alternative, salmon fishing employment levels will remain constant and recreation/ tourism employment levels will increase.

### TCP-10

The proposed action alternatives provide varying degrees of balance between harvested volume and effects to other resources. Alternative 6 was developed in response to public comment on the Draft EIS, and avoids harvest in many areas noted as high value for subsistence, wildlife, and visual resources.

distributed populations of existing native and desired nonnative vertebrate species" (3-383) is questionable at best. Even if this is the case under the proposed harvest activity, it will certainly not be the case after future rounds of harvest projected in the DEIS. The DEIS suggests that wolves may be adversely affected by the proposed action. The use of "local informants" (3-307) appears to be the only method that the Forest Service has used to determine wolf populations in the Lab Bay Project Area. This is a very poor method to use, especially if such informants include those "trapping wolves to increase the local deer population," (3-307) especially for a species that has recently been suggested as a candidate for threatened status. If the Forest Service is to hold true to promises made at public hearings that they wish to maintain viable populations of wolves so that they don't have to deal with such problems, they should be taking a much more cautious approach to habitat protection. The same could be said for promises made to protect karst in all alternatives except 3.

### TCP-8

CUMULATIVE EFFECTS OF TIMBER HARVEST ON SOCIO-ECONOMIC ACTIVITY FAILED TO INCLUDE THE NEGATIVE EFFECTS OF TIMBER HARVEST ON TOURISM, FISHING AND COMMUNITIES WHOSE PRIMARY LIFESTYLE INCLUDES SUBSTANTIAL SUBSISTENCE ACTIVITY. The positive effects of the unique karst and cave resources on tourism are only beginning to be felt. In the past year, local tourism operators have begun a popular tour at El Capitan Cave and have expressed great interest in expanding this interest with tours to other significant karst features. While it is true that a number of short-term employment opportunities will arise due to timber harvest, it is also true that there is potential for long-term declines in employment opportunities in the fishing, guiding, tourism, and recreational support industries as a result of timber harvest. These should be included in the analysis. A CORRECTION FACTOR SHOULD BE INCLUDED IN THE ANALYSIS TO ACCOUNT FOR THE DIFFERENCE BETWEEN SHORT TERM INCREASES AND LONG-TERM DECREASES IN EMPLOYMENT.

### TCP-9

I had hoped that the Lab Bay DEIS would have incorporated many of the lessons of the past few years. It is true that it comes at a time of great political turmoil in the Tongass, but that is not an excuse for a land management agency to fail in its first priority, the management of our lands for sustainable, long term use in the best interests of the public. None of the proposed alternatives succeed in such a goal. We are once again asked to either harvest in a way that will create a long-term loss of community stability, along with the irreparable loss of wildlife, scenic, recreational, and karst resources, or to not harvest at all.

### TCP-10

A number of major flaws must be corrected, with accompanying public

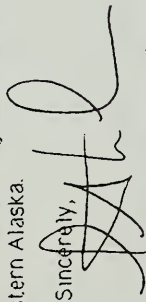
### TCP-11

## Responses to Tongass Cave Project

**TCP-11** | discussion and input before any FEIS can succeed in fulfilling legal requirements of the process.

I hope that this can occur rather than once again entering a period of recrimination, appeals, and continued polarization of groups who in reality share many of the same interests in building and maintaining a sustainable forest industry for southeastern Alaska.

Sincerely,



Stephen W. Lewis, director

**TCP-11**

Forest Service does not agree with your comment. Timber harvest proposed under the Lab Bay EIS is necessary, in part, to comply with the terms of the KPC Long-Term Contract. The EIS proposes timber harvest in compliance with federal and state laws, including NEPA, ANILCA, and TTRA.



September 30, 1995

Brad Powell, Forest Supervisor  
Tongass National Forest  
Federal Bldg  
Ketchikan, AK 99901

Mr. Powell:

Thank you for the opportunity to comment on the proposed Lab Bay Draft EIS. These comments are on behalf of the Tongass Conservation Society (TCS), a local member group of SPACC with a strong interest in the well-being of the Tongass National Forest.

Initial scoping for this project began 4 years ago (August 1991). TCS has heard that the Government assigned this project to an independent professional services contractor and has spent over \$4 million in its preparation, administration, and execution. This would imply that the NEPA evaluation alone would cost approximately \$50/mbf, which exceeds the indicated net stumpage rates for any of the alternatives. The most 'profitable' alternative has a projected present net value of NEGATIVE 10 million dollars. TCS formally requests to have cost recovery of the Lab Bay project included as a significant issue for the Final EIS.

### TCS-1

TCS is concerned that Lab Bay adds to a growing list of Tongass timber projects that have the range of alternatives narrowly confined by an overly restrictive Purpose and Need statement -- in this case, to contribute exactly 85 mmbf to the continued execution of the KPC long-term contract. This Purpose and Need statement is based on the premise that these precise volume requirements are documented within the Forest Plan and therefore must be duly executed, with no consideration given for alternative volumes. However, TCS understands that a recent FOIA to your office revealed that, at the time scoping began for Lab Bay, the Forest Plan contained no project area specific volumes for specific timeframes. Furthermore, we have heard that the 85 mmbf 'Purpose and Need' for Lab Bay was based on a purely arbitrary decision by FS managers.

### TCS-2

Additionally, the Purpose and Need speaks to a necessity of providing 205 mmbf to KPC annually. We note that KPC Contract Clause B0.52 clearly specifies a maximum average annual cut over a 5-year period of 192.5 mmbf.

### TCS-3

Now that the entirety of the Tongass National Forest (instead of just the Ketchikan Area Primary Sale Area) is being used to meet the obligations of the KPC long-term contract, TCS feels it is time to reallocate the amount of timber each project on the southern Tongass must deliver. This seems to be in line with a September 1995 ruling by the 9th U.S. Circuit of Appeals which said the Forest Service must consider other alternatives because of changed contractual obligations. TCS formally requests the Purpose and Need for this project be reformulated and new set of alternatives be analyzed.

## Responses to Tongass Conservation Society

### TCS-1

Cost recovery of planning for the Lab Bay Project is not an issue to be addressed through the EIS process. Planning for management of Forest Service lands occurs as an ongoing process. Fixed pre-harvest costs were estimated at \$1,554 per acre based on the Forest Service Timber Sale Program Information Reporting system (TSPIRS) for FY 1994, Ketchikan Area. This figure includes costs of sale preparation, timber planning, silvicultural exams, harvest administration, general and program administration, facilities depreciation, and regional land line location.

### TCS-2

The purpose and need for action stated in the Lab Bay Draft EIS was in part to help satisfy the timber volume needs for the Long-Term Contract with Ketchikan Pulp Company (KPC). For the purpose of this project the volume has been determined to be approximately 85 MMBF. The Final EIS action alternatives range in volume from 40 to 102 MMBF.

Long-Term contract clause BO-52 specifies that "the average annual amount of pulptimber...during the period...shall be...a maximum of 35,000,000 cubic feet...". (Using the contract specified conversion factor of 5.5 board feet per cubic feet, 35,000,000 cubic feet equates to 192.5 MMBF.) This amount is an "average annual maximum" as defined over a 5-year operating period. Clause BO-52 does not require that the maximum is not exceeded for any individual year within the 5-year operating period. (See Appendix A.)

### TCS-3

Reallocation of harvest across the Tongass National Forest is beyond the scope of the Lab Bay Project. Reallocation of timber harvest is a function of the Tongass Land Management Plan Revision process.

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## Responses to Tongass Conservation Society

### TCS-4

Another major concern is sustainability of the project area's timber supply, which provides the major source of wood for several isolated timber-dependent communities. There is reference to "15.4 % hard falldown" in Table 3-68, which was derived from the Draft Control Lake Cumulative Effects Analysis. We have yet to see this document in print and find it difficult to comment fully on Lab Bay's use of its unpublished conclusions. Please extend the Lab Bay comment period until the Control Lake Cumulative Effects analysis is published.

### TCS-4 - 6

The Lab Bay Final EIS addresses the issue of cumulative timber harvest within the Project Area, based on the current Forest Plan (TLMP 1979, as amended) and the currently implemented standards and guidelines. The Final EIS also addresses cumulative effects of timber harvest on old-growth habitat and wildlife to the year 2054, using the TLMP (1979, as amended) projections of future harvest.

### TCS-5

Nonetheless, TCS has information that shows this 15.4% falldown estimate is grossly understated, and formally challenges it. We understand that: (1) soft falldown was incorrectly ignored in the calculations; (2) planning falldown was incorrectly calculated from the 1979 TLMP base, instead of the TLMP Revision base; (3) layout falldown did not consider 'recon falldown' or unit expansion acreage; (4) in the future, falldown will not remain static, but will markedly increase, as more difficult and less productive sites are scheduled; and (5) that the Forest Service may not have used proper mathematical procedure in calculation of the composite falldown factor. TCS believes that true falldown on the Ketchikan Area exceeds 50 % and formally requests the Forest Service reassess the Timber Section Cumulative Effects section.

Field verification was performed on the majority of harvest units and roads proposed under the Lab Bay sale. Project-specific information on streams, soils, timber, and logging system feasibility was used to provide reliable estimates of timber available during this sale. This project-specific information was provided, along with information from other project areas and with the results of the Ketchikan Area Update (conducted with the Control Lake EIS), to the TLMP Revision Team for use in developing alternatives for the Forest Plan Revision (1996 TLMP Draft Revision).

### TCS-6

Much significant new information has arisen over the last several years: the importance of HCAs; protective measures to prevent listing of the goshawk and wolf; the importance of longer rotations; Tom Alley's findings on the significance of karst lands; PACFISH; former-Chief Dale Robertson's direction to reduce clearcutting on National Forests; site specific logging plans which indicate much of the Tongass timber base will likely never be harvested, etc. We think it is critical to incorporate this new information into a reanalysis of the Tongass timber base to determine if the levels of harvest you have unilaterally decided upon for the Lab Bay (and other) projects(s) is truly sustainable. TCS formally requests that you heed the edict of Chief Thomas and hasten the TLMP Revision and delay Lab Bay (and all other) project(s) until that is accomplished.

Long-term timber supply, old-growth habitat management, subsistence, falldown, and viability of wildlife populations on the Tongass National Forest are addressed in the 1996 TLMP Draft Revision. These issues cannot be addressed solely through individual project design, as the resources are managed on a larger scale. The National Forest Management Act regulations require that Forest plans be revised on a 10- to 15-year cycle to adapt to changing views, resource uses and demand, and natural resource knowledge. The current Forest Planning process implements this direction, and incorporates project-level information into its Forest-wide management plan.

### TCS-7

Until a new Forest-wide and Area-wide ASQ is established by the completed TLMP Revision or an amendment, TCS formally requests your EIS's analyze alternatives covering a wide range of timber volumes. Otherwise, your actions are motivated by need (long-term contract demand) and faulty logic (existing TLMP) rather than on the lands's true capability to produce resources at a sustainable level.

### TCS-7

Alternative 6 proposes to harvest 40 MMBF, Alternatives 3, 4, and 5 propose 63.5 to 70 MMBF, Alternative 2 proposes 102 MMBF, and Alternative 1 proposes that no harvest occur. This provides a wide range of alternatives.

### TCS-8

Management Area K03 is currently out of proportion based on the completion of the 1989-94 long-term sale offering in the Lab Bay Project Area. This discrepancy was identified prior to the completion of the 1989-94 offering and several high volume units were not released to KPC to assist in correcting this deficit. In order to bring Management Area K03 into compliance with proportionality prior to the end of the rotation, approximately 1,451 acres of volume classes 4 and 5 will need

### TCS-8

awry. TCS formally requests that the Final EIS provide another fix for the MA K03 proportionality overage than the uneconomical Thorne Island offering. It is also important to analyze how much MORE volume class strata 4/5 timber will have to be harvested in the Lab Bay portion of K03, in the likely event that the 321 acres of volume class strata 4/5 from the CPOW portion of MA K03 are not harvested.

TCS-8

During implementation of this project, TCS requests there be no deliberate unit expansion, i.e., harvest outside the sanctioned ROD boundaries. TCS has followed this issue closely and believes it is still widespread. Unit expansion understates the true falldown that is occurring, and reduces viability of future offerings. Unit expansion during implementation of the 1989-94 offerings is what caused the proportionality departures you are facing in ALL Management Areas within the Lab Bay project area. These proportionality departures are also contributing factors to the excessive cost and delay of this project.

TCS-9

APPENDIX A is completely out of date, especially Table 1, and needs revised.

TCS-10

TCS is strongly opposed to any harvest on any National Forest System lands that contain significant karst features. These have been determined to be of international significance and have been the focus of intensive harvest in the past -- particularly the lower elevation areas. TCS favors a 10 year moratorium on timber harvest on karst lands and a removal from the Forest Plan suitable-available timber base for a complete planning planning cycle, or until such time that cumulative effects monitoring shows they can be harvested without impairment.

TCS-11

Here are a few other, more site specific comments. Please remove all proposed harvest from the 500 foot beach fringe and 1000 foot estuary buffer. Tlmp Revision standards and guidelines are supposed to be in effect, so please use them. Several proposed harvest units (e.g. 540-224) are shown to be composed almost entirely of sub-volume class strata 4 timber -- why? Units 527-206 and -226 are adjacent to a municipal water supply and should not be harvested. Finally, unit 534.1-204 should be deleted for uneconomic roading concerns, to prevent an expensive survey against non-National Forest Systems lands, and to prevent any impression that the road is being built to access KPC ownership.

TCS-12

TCS-13

TCS-14

TCS-15

Thank you again for the opportunity to comment.

Sincerely,



Tracy Smith  
President, Tongass Conservation Society

## Responses to Tongass Conservation Society

TCS-8  
(Cont.)

to be harvested. The proposed harvest of Thorne Island under the Uneven-Aged Management Plan will contribute 187 acres of volume classes 4 and 5 toward meeting the proportionality requirement. In the event that the 321 acres of volume classes 4 and 5 scheduled for harvest within K03 in the CPOW Project Area is not harvested, this additional acreage will need to be harvested from the Lab Bay Project Area to meet the proportionality requirement.

The Uneven-Aged Management Plan for Thorne Island was developed to allow a moderate level of timber harvest while preserving resource values for the island. This approach is more economical than conventional methods in the short-term due to the lack of developing a costly transportation infrastructure. The proposed helicopter offering on Thorne Island is site-specific in that the individual 2-acre cutting units have been identified and are shown on the unit map (Planning Record). These units are defined in the Forest Service Geographic Information System database. The GIS can provide GPS coordinates to assist in the location of each cutting unit during field layout. If significant resource concerns are identified during field layout of the individual units, then the appropriate mitigation measures will be applied. Field reconnaissance of the proposed conventional harvest units on Thorne Island provided site-specific information that overlaps with the locations of many of the proposed 2-acre cutting units. Cultural resource surveys have been conducted on Thorne Island and these surveys resulted in dropping three cutting units during this entry. Approximately 10 additional 2-acre units require cultural resource surveys.



## Responses to Tongass Conservation Society

awry. TCS formally requests that the Final EIS provide another fix for the MA K03 proportionality overage than the uneconomical Thorne Island offering. It is also important to analyze how much MORE volume class strata 4/5 timber will have to be harvested in the Lab Bay portion of K03, in the likely event that the 321 acres of volume class strata 4/5 from the CPW portion of MA K03 are not harvested.

TCS-8

During implementation of this project, TCS requests there be no deliberate unit expansion, i.e., harvest outside the sanctioned ROD boundaries. TCS has followed this issue closely and believes it is still widespread. Unit expansion understates the true falldown that is occurring, and reduces viability of future offerings. Unit expansion during implementation of the 1989-94 offerings is what caused the proportionality departures you are facing in ALL Management Areas within the Lab Bay project area. These proportionality departures are also contributing factors to the excessive cost and delay of this project.

TCS-9

APPENDIX A is completely out of date, especially Table 1, and needs revised.

TCS-10

TCS is strongly opposed to any harvest on any National Forest System lands that contain significant karst features. These have been determined to be of international significance and have been the focus of intensive harvest in the past -- particularly the lower elevation areas. TCS favors a 10 year moratorium on timber harvest on karst lands and a removal from the Forest Plan suitable-available timber base for a complete planning cycle, or until such time that cumulative effects monitoring shows they can be harvested without impairment.


TCS-11

Here are a few other, more site specific comments. Please remove all proposed harvest from the 500 foot beach fringe and 1000 foot estuary buffer. TLMP Revision standards and guidelines are supposed to be in effect, so please use them. Several proposed harvest units (e.g. 540-224) are shown to be composed almost entirely of sub-volume class strata 4 timber -- why? Units 527-206 and -226 are adjacent to a municipal water supply and should not be harvested. Finally, unit 534.1-204 should be deleted for uneconomic roading concerns, to prevent an expensive survey against non-National Forest Systems lands, and to prevent any impression that the road is being built to access KPC ownership.

TCS-15

Thank you again for the opportunity to comment.

Sincerely,



Tracy Smith  
President, Tongass Conservation Society

TCS-9

The Ketchikan Area has developed a policy for evaluating changes to units and roads that occur between the Final EIS/ROD and final layout (Letter of Direction dated October 25, 1993 from Forest Supervisor Rittenhouse). This policy includes specific conditions that trigger additional review opportunities for state agencies. The policy also addresses when additional NEPA documentation may be required. It should be noted that the level of field verification of units and roads for the Lab Bay EIS should significantly reduce the number of changes during final layout from what has been experienced in the past. On previous projects, unit shapes and road locations were often changed substantially between the planned version and the field verified version in response to conditions observed on the ground. The Ketchikan Area unit and road change policy will be followed during implementation to ensure that adequate review and NEPA documentation takes place.

TCS-10

Appendix A of the Draft EIS was drafted to provide detailed explanations of items contained in Chapter 1 of the Draft EIS including the project purpose and need, and why the sale is scheduled for the Lab Bay area. Although the specific projections for volume of and date of harvest of future sale areas have changed, the basic premises and conclusions provided in Appendix A of the Draft EIS have not changed. Lab Bay remains part of the Primary Sale Area under the KPC Long-Term Sale Contract, and will continue to be a high priority area in timber sale planning. A revised and updated Appendix A is provided in the Final EIS.

TCS-11

Refer to response to AK-8.

TCS-12

No harvest is proposed within 500-foot Beach Fringe and 1,000-foot Estuary Fringe areas, with the exception of the Thorne Island Uneven-Aged Management Plan (alternatives 4 and 6). As described in the EIS, the harvest of 26 acres (13 two-acre patch cuts) is proposed in the Beach Fringe under the Thorne Island Uneven-Aged Management Plan. The Beach and Estuary Fringe are designed to provide mitigation for even age harvesting located inland of the fringe. When managing the entire island on an uneven-aged basis, this mitigation is not necessary to meet resource objectives. Therefore, the Beach Fringe was considered available for harvest under the Thorne Island Uneven-aged Management Plan. The patch cuts are designed to mimic naturally occurring openings in



away. TCS formally requests that the Final EIS provide another fix for the MA K03 proportionality overage than the uneconomical Thorne Island offering. It is also important to analyze how much MORE volume class strata 4/5 timber will have to be harvested in the Lab Bay portion of K03, in the likely event that the 321 acres of volume class strata 4/5 from the CPOW portion of MA K03 are not harvested.

TCS-8

During implementation of this project, TCS requests there be no deliberate unit expansion, i.e., harvest outside the sanctioned ROD boundaries. TCS has followed this issue closely and believes it is still widespread. Unit expansion understates the true falldown that is occurring, and reduces viability of future offerings. Unit expansion during implementation of the 1989-94 offerings is what caused the proportionality departures you are facing in ALL Management Areas within the Lab Bay project area. These proportionality departures are also contributing factors to the excessive cost and delay of this project.

TCS-9

APPENDIX A is completely out of date, especially Table 1, and needs revised.

TCS-10

TCS is strongly opposed to any harvest on any National Forest System lands that contain significant karst features. These have been determined to be of international significance and have been the focus of intensive harvest in the past -- particularly the lower elevation areas. TCS favors a 10 year moratorium on timber harvest on karst lands and a removal from the Forest Plan suitable-available timber base for a complete planning cycle, or until such time that cumulative effects monitoring shows they can be harvested without impairment.

TCS-11

Here are a few other, more site specific comments. Please remove all proposed harvest from the 500 foot beach fringe and 1000 foot estuary buffer. TLMF Revision standards and guidelines are supposed to be in effect, so please use them. Several proposed harvest units (e.g. 540-224) are shown to be composed almost entirely of sub-volume class strata 4 timber -- why? Units 527-206 and -226 are adjacent to a municipal water supply and should not be harvested. Finally, unit 534.1-204 should be deleted for uneconomic roading concerns, to prevent an expensive survey against non-National Forest Systems lands, and to prevent any impression that the road is being built to access KPC ownership.

TCS-12

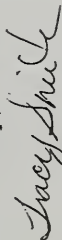
TCS-13

TCS-14

TCS-15

Thank you again for the opportunity to comment.

Sincerely,



Tracy Smith  
President, Tongass Conservation Society

## Responses to Tongass Conservation Society

TCS-12  
(Cont.)

old-growth forest, and are not expected to affect the function of the Beach Fringe habitat. Harvest prescriptions that maintain the integrity of the Beach Fringe are compatible with the guidelines of the 1991 TLMF Draft Revision.

TCS-13

There are some areas within proposed harvest units that are not currently mapped with a volume class designation. Many of these areas represent inclusions within harvest units that were upgraded to volume class 4 or higher based on ground verification. Other areas are inclusions of low volume stands within or on the perimeter of proposed harvest units. All proposed harvest units consist of commercial forestland containing a minimum estimated 8 thousand board feet per acre.

TCS-14

Alternative 6 excludes from harvest any units within a known domestic water supply. The Decision Maker will have the option of including or excluding these units from the selected alternative.

TCS-15

The decision to harvest, or not to harvest, an individual unit is not based on purely economic factors. Comments on the Draft EIS have expressed significant concern over proposed harvest in the area east of Red Bay. These concerns are primarily related to loss of wildlife habitat and increased subsistence use due to road development. Unit 534.1-204, as well as other units in the area, were not included in Alternative 6 of the Final EIS for these reasons.

Refer also to response to SEACC-9.



## Ketchikan Pulp Company

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FAX 907/225-8260

September 29, 1995

Mr. Bradley Powell  
Forest Supervisor  
USDA Forest Service  
Supervisor's Office  
Federal Building  
Ketchikan, Alaska 99901

Re: Comments for the Draft Lab Bay EIS

Dear Mr. Powell:

The Lab Bay Project Area has been a historically significant area of operations for Ketchikan Pulp Company (KPC). As such, we offer the following comments regarding the proposed project.

KPC encourages you to modify an alternative in this project to help meet the desired future condition of the Lab Bay Project Area to meet the existing Management Direction/Emphasis for each Management Area in the current Forest Plan (TLMP 1979, as amended). There is also a need to modify an existing alternative to contribute to the obligation set by Congress under Section 101 of the Tongass Timber Reform Act (TTTRA) 1990, directing the Forest Service "to the extent consistent with providing for multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which meets annual market demand..."

KPC-1

KPC-2

Our reasons for recommending a modification to an existing alternative are outlined below.

1. The proposed action is to harvest 85 mmbf of timber from the Lab Bay Project Area. However with the exception of alternative 2, none of the proposed alternatives meet the objective.

OPERATING DIVISIONS  
WARD COVE PULP MILL  
THORNE BAY LOG  
KETCHIKAN SAWMILL  
TUXEKAN LOG  
NAUKAIT LOG

TL511.A95

## Responses to Ketchikan Pulp Company

KPC-1

The actions analyzed in this EIS are designed to implement direction in TLMP (1979, as amended). Further, these actions are also designed to be consistent with the preferred alternative of the TLMP Draft Revision Supplement (1991) and the 1996 TLMP Draft Revision. See Chapter I of the Draft EIS or Final EIS for additional explanation. In addition, the actions analyzed under each alternative contribute to meeting the obligations set forth in TTTRA and represent our best interpretation of the intent of this Act.

KPC-2

The Purpose and Need of the Lab Bay Project EIS is 85 MMBF. The action alternatives in the Final EIS range from 40 to 102 MMBF.

Mr. Bradley Powell  
September 29, 1995  
Page 2

## Responses to Ketchikan Pulp Company

**KPC-3** 2. The proposed action to harvest 85 mm<sup>3</sup> of timber from the Lab Bay Project Area can increase the deer usage of the areas clear-cut now, by later pre-commercial thinning, and eventually commercially thinning according to a study conducted by Enserch Environmental Corporation for the Forest Service in August of 1994. (See enclosure.)

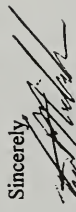
**KPC-4** 3. The proposed action to harvest 85 mm<sup>3</sup> of timber from the Lab Bay Project Area will not have any negative effects on the karst landscape. According to the **Overview of Goals for Management of Caves and Karst Topography on the Tongass**, "Most caves predate the most recent glaciation..." If the caves and karsts featured landscape survived glaciation, harvesting timber should not pose any problems at all in comparison.

**KPC-5** 4. The Habitat Conservation Areas should be removed from the project area as they are not necessary and probably not legal. To help meet the proposed action to harvest 85 mm<sup>3</sup> of timber from the Lab Bay Project Area harvest units should be planned on all of the commercial timber land available in the project area.

**KPC-6** 5. The proposed action to harvest 85 mm<sup>3</sup> of timber from the Lab Bay Project Area should include economically feasible volume. The proposed plan for Thorne Island should be modified to be economically feasible.

Finally, we would like to thank you for allowing the two week extension of the comment period due to the commercial fishermen being out to sea. We hope that you will take every opportunity to speed the remaining process up so that the people depending on this timber for their livelihood will still have jobs by the time this volume is available to harvest.

Sincerely,

  
Kent P. Nicholson  
Contract Manager

KPN:ak

cc: O. J. Graham

**KPC-3**

Selection criteria for precommercial thinning are discussed under Forest Health in the Environmental Consequences section of the Final EIS. Additional studies are necessary, during heavier snow years, to confirm Enserch's results.

**KPC-4**

Most caves do indeed predate the most recent glaciation. Of concern today is the anticipated adverse effects of timber harvest on sensitive karstlands. Refer also to response to AK-8.

**KPC-5**

The current Forest Plan (TLMF 1979, as amended) provides direction on retention of old-growth habitat. Each action alternative proposes a different strategy to accomplish the old-growth retention direction. Under alternatives 3 and 6, the proposed HCA's identified in the Interim Habitat Management Guidelines Draft EA (1994a) are deferred from harvest.

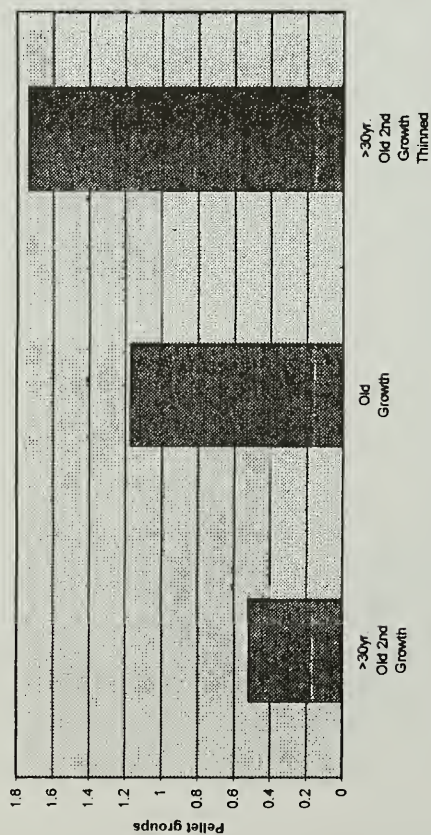
**KPC-6**

The Socio-Economic section of the EIS addresses the economic feasibility of geographical areas within each alternative. The economic evaluation presented in Chapter 3 and in Appendix E shows that an Uneven-Aged Management Plan for Thorne Island provides a more positive economic benefit than a conventional harvest plan, and reduces resource impacts to the area.

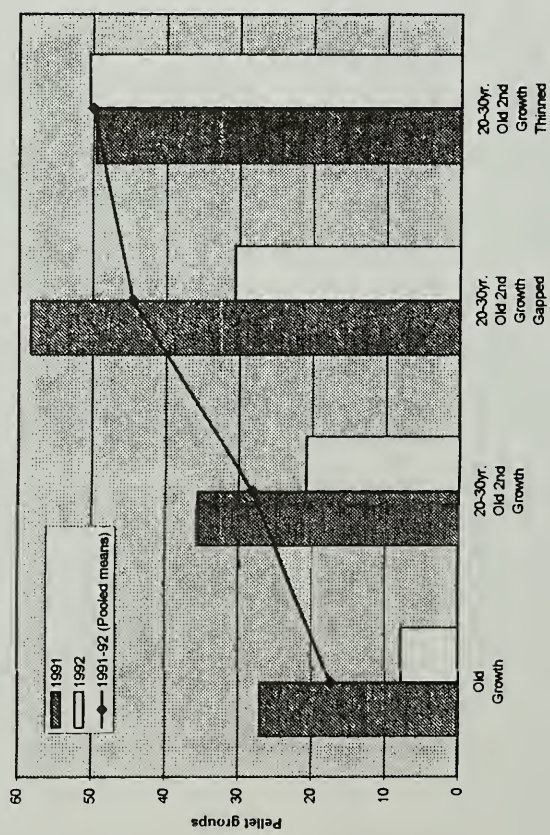
TL511.A95



Ketchikan Pulp Co. 1995 Deer Study



Enserch Environmental's report to U.S.D.A. Forest Service, Region 10



## Responses to William Baumgartner

WB-1

An ANILCA public hearing was held in Whale Pass on August 17, 1995. In addition to accepting formal testimony on subsistence issues, meeting participants were invited to make formal or informal comments on any aspect of the project. The meeting transcript is included in Appendix O.

WB-2

Community profiles, including demographic information, are included in the Subsistence Resource Report. The detailed description and analysis of the Subsistence Resource Report had to be greatly summarized for the EIS.

WB-3

A detailed map of Whale Pass, demonstrating its dispersed nature, is included in the Subsistence Resource Report. We acknowledge that the community is indeed spread out.

Whale Pass  
PO Box WWp  
Ketchikan, AK 9950-0280  
August 18, 1995

Forest Supervisor  
Federal Building  
Ketchikan, AK 99901

Re. Lab Bay draft EIS  
Dear Mr. Vaught, Acting Forest Supervisor

I was disappointed that a public hearing has not been scheduled for Whale Pass to receive comments on the Lab Bay draft EIS. There are many other issues than subsistence. The Forest Service is only a small portion of the subsistence rule making. My reason to say a hearing should be held in Whale Pass is that it is the only community within the project area in which actual harvest activities take place. Not holding a hearing in Whale Pass seems a bit cavalier. Whale Passage Subdivision is represented by a non-profit corporation registered with the State and originally organized by the State. The corporation for the last 10 years has had a board of directors elected by the lot owners in the subdivision, that represents the community.

WB-1

Among the issues you presumed to address in the draft is Issue 7 "What effect would timber harvest and road construction have on local communities and residents". There is nothing in the draft on the demographics of the area, especially or more specifically the residential areas that the harvested timber will be hauled through.

WB-2

Specific comments on the DEIS are as follows:

With respect to the map the following is offered. The community of Whale Pass is not a compact community. It extends from the eastern edge of the land designated State and private land along the shoreline of Whale Passage for about 1 1/2 miles westerly to approximately where the 3065 road approaches the beach. Then before the subdivision starts again the 3065 road passes the old school building, the community harbor and float plane facility, the parking area for the floats, the community building and fire hall, several storage buildings, the new school, several residences, two driveways that serve the post office and 10 or 11 residences. The residential lots continue to the end of the 3065 road and FH 30 beginning a 1/2 mile above its junction with 3065 to the junction

WB-3



## Responses to William Baumgartner

- with the 3060 road then runs along the 3060 road to the westerly boundary of the State and private land. The remainder of the subdivision is accessed by a local road named Sallery Circle which connects to FH 30 near the LTF. Therefore all of the 3060 road within the State and private tract, FH 30 from the LTF to approximately 1/2 mile north of the junction with the 3065 road and all of the 3065 road adjacent to the beach are an integral part of the community. The community is spread out. The fact that it is spread out over relatively long distances causes more traffic than the population might indicate. It is a linear town like Ketchikan except the lots are one acre or bigger.
- The Whale Pass LTF is actually about one third mile southeast of where it is shown on the map. Technically it is outside of the study boundary.
- COMMENTS ON VOLUME 1
- page 1-14 Scooping and Public Participation. This item should have included the Prince of Wales Community Advisory Council (POWCAC). This council is composed of a representative from each Prince of Wales Community, the Chamber of Commerce, Native Corporations and the USDA Forest Service.
- page 1-19 Issue 7. There are no demographic studies in the DEIS for the communities in the study area especially Whale Pass which has active logging in the community. There are no traffic or sufficiency studies of the roads in the community of Whale Pass which would also carry timber from the harvest area to the Whale Pass LTF. The three bridges on FH 30 were widened in the last 10 years but the roads are still one lane wide. The log stringer bridge across Snoose Creek was replaced several years ago but with a one lane bridge. This might be sufficient for the traffic but the signing needs to be upgraded.
- page 3-169 Wolves should not be reported by a tenth of a animal. Rounding to a whole number would be more appropriate.
- pages 3-172, 3 Under gray wolf there is a discussion of road density and this appears to be where the decision came from to make numerous access road closures done over the last 5 years. Since there are only 15 or 16 wolves in the entire area and about 200 humans it doesn't seem to be a very democratic process. I have lost
- WB-4** Maps in the Final EIS are revised to show the correct location of the Whale Pass LTF.
- WB-5** POWCAC was not a specific organization contacted during initial Project Scoping. However, POWCAC members are individually represented on the Project mailing list, and public meetings on the Draft EIS were noticed and held in communities where POWCAC members are resident. Anne Archie, former Thorne Bay District Ranger, was a member of POWCAC, and regularly updated the Council with information regarding the Lab Bay Project.
- WB-6** Refer to WB-2 for discussion of demographic studies.
- Forest Road 30 was constructed for timber harvest, and will continue to be maintained by the Forest Service at that level. It is currently at the minimum width for a 2-lane road, upgraded from its original constructed width of one lane with intervisible turnouts.
- The log stringer bridge at Snoose Creek was replaced with a standard 16-foot wide temporary modular bridge during the 1989-94 sale, with the intention that it be removed after use to close the spur road. Subsequent State land transfers resulted in private land allocations behind the bridge, and currently private landowners are using the bridge to access their land. The bridge will remain in place while the Forest Service negotiates an access plan with the landowners. The Thorne Bay District will review the bridge to ensure that appropriate object markers are in place.
- Wolves were presented by a tenth of an animal because of the small number of animals being discussed. The number of animals displayed reflects the change in habitat capability, not the actual population value. Rounding to the whole number would not accurately display the reduction in habitat capability.
- There are many reasons for managing access of the National Forest System roads. Road access is being managed to reduce road maintenance costs, to reduce public exposure to safety hazards, to manage wildlife and fisheries habitat (including wolf habitat), and to create or enhance recreation opportunities. The recent road closures in this area are part of the decision made by the Forest Supervisor in 1989.
- WB-7** Wolves should not be reported by a tenth of a animal. Rounding to a whole number would be more appropriate.
- WB-8** Under gray wolf there is a discussion of road density and this appears to be where the decision came from to make numerous access road closures done over the last 5 years. Since there are only 15 or 16 wolves in the entire area and about 200 humans it doesn't seem to be a very democratic process. I have lost



## Responses to William Baumgartner

WB-9	<p>many of my favorite scenic vistas as well as opportunities to salvage firewood with these closures. In addition to the resident humans there are likely another 1000 humans denied reasonable access. I suspect the statement, by Surling Et Al "that wolf population are extremely vulnerable to harvest when road densities approach 0.93 miles per square mile," is not supported by fact. See page 3-169 which shows the estimated population dropping 6% between 1954 and 1995 while deer population has dropped 16%. I don't find that road density is a problem or a solution to a perceived wolf scarcity.</p>	<p>Wolf populations on Prince of Wales Island are currently being studied by Dave Person, a University of Alaska graduate student. A summary of his findings is presented in the Wildlife section of Chapter 3.</p>
WB-10	<p>Page 3-180 The same comment regarding the number of wolves are offered as before. A 50 year projection of deer numbers based on HCH's seems a real stretch. One or two severe winters could kill half the deer. We have seen these kills during the last 30 years.</p>	<p>Refer to response to WB-8.</p>
WB-10	<p>Page 3-192 I think this "protection measure" number 1 unduly restricts recreation opportunity for scenic vista viewing and subsistence use by human residents especially those whose mobility might be handicapped by age, infirmity or other reason.</p>	<p>Refer to response to WB-8. The Forest Service mapping does not differentiate ownership in the Whale Pass Subdivision.</p>
WB-11	<p>Page 3-204 There is also about 200 Acres under private and University of Alaska ownership in the Whale Passage Subdivision. The lands in the National Forest System should be listed as public lands managed by the USDA Forest Service.</p>	<p>National Forest System Lands are the public lands managed by the USDA Forest Service.</p>
WB-12	<p>Page 3-211 The third paragraph states the majority of the local roads are open and maintained. You define local roads. Based on my understanding of your definition my observation is the exact opposite. Perhaps if the collector roads were better defined or indicated on the map, then the local roads would be all roads except the arterial and collectors and then it could be determined if the majority of the local roads are in fact open, or as I state are closed. FH 15 is in fact closed to all traffic just West of the El Cap Cave with a cable locked to a post and a sign stating "Private Driveway Bear Valley Lodge". It is very important to me and most other Whale Pass Residents to access the southwest quadrant of the study area by road for various reason. Especially El Cap Lake, Calder Bay, Shakan Bay, Marble Creek and several other creeks which support fish in this area and also to access the historic marble quarry and related historic artifacts. The Lab Bay side of FH 29 is overgrown with alder to the point where truck appurtenances are at hazard. This is unfortunate as the area beyond the alder patch is especially noted for viewing Calder Mountain. The completion of the Calder tie road</p>	<p>Your comment noting the scenic and recreational value of the Calder Tie Road was considered. Alternative 6 of the Final EIS does not propose construction of the Tie Road. Numerous comments were received opposing the Tie Road, due primarily to adverse effects to wildlife and subsistence hunting. In addition, the few remaining harvest units proposed for the Calder/El Cap vicinity did not support an offering area under Alternative 6.</p>

## Responses to William Baumgartner

4

### WB-12

and the opening of FH 15 in the vicinity of Bear Valley Lodge or the reopening of the by pass over 1598 and 1599 would make an excellent scenic loop with views of El Cap Pass, El Cap Lake, Calder Bay and Calder Mountain and the scenery along FH 20. I have been anticipating this route for many years. I take particular note that a deep ditch was dug across the 1599 road at its junction with FH 15 on August 1, 1995 even though the project map shows it currently open. I think this draft needed a map showing roads both closed and proposed to be closed in the next two years. Then the reviewers could address the impact of the administrative action. This DEIS does not adequately address the closure of roads. Actually the road network which is stated to be between 370 and 449 miles is misleading. If a road is closed it is not part of a network and many of the closed roads quickly revert to forest.

### WB-13

Page 3-222 Dropping slash into the water while harvesting Thorne Island is totally unacceptable because of damage to vessels using the heavily traveled waterway. Slash frequently floats partially submerged and is especially hazardous to rudders, propellers and lower units. Large slash can hole a vessel especially operating at high speed.

### WB-14

Page 3-230 Management states in part: "access into newly entered drainages would be discouraged or prohibited to minimize wildlife impact unless there is a specific recreational opportunity." There have been few questions of local residents regarding "specific recreational opportunity" prior to road closure. Without opportunity to provide input it means the road closures are a unilateral decision. In order to furnish management local knowledge, prior to road closure orders the proposal should be posted in Whale Pass as well as at the Thorne Bay Ranger District Office.

### WB-15

Page 3-231 Road Closure. Stated in the last sentence. "Reasons for proposed closures are discussed on the Road Maintenance Objective Cards (Appendix I)." Appendix I has 5 pages titled RNUM, XLS. There are no Road Maintenance Objective Cards nor is any reason given for proposed closure. I object to recent closures, past closures and proposed closure without sufficient justification and without an opportunity for public comment by local residents. Opportunity would include posting of the proposal in the nearest community, or communities if the closure were within 10 or 15 miles of a community other than the closest community. Vague generalized statements regarding wildlife, safety etc. aren't a reason. I use and

### WB-13

The large-scale Project Area Map displays existing roads proposed for closure and proposed roads proposed for closure. These are the roads that would be closed at the conclusion of the Lab Bay Project.

Road density analyses in the EIS typically address roads in relation to whether they are open or closed. Closed roads still have a road bed and can be reconstructed as necessary in the future, and therefore can not be completed disregarded.

### WB-14

There was an incorrect reference to the disposal of slash into the water in the Draft EIS. During helicopter yarding operations for Thorne Island, the slash that accumulates will be disbursed back into the harvest unit. The Final EIS text has been revised to clarify this point.

### WB-15 and 16

A road access management plan has been developed for the Lab Bay Project area as part of the EIS. Comment on this plan was solicited during public meetings on the Draft EIS. Most of the roads constructed for the project would be closed at the end of logging operations, according to access management direction provided on the road cards. In addition, several miles of roads that are currently open would also be physically closed according to access management objectives after issuance of the Record of Decision and subject to available funding and work schedule.

Roads will be closed primarily by physical means such as pulling bridges or culverts or constructing barriers to motor vehicles. Roads typically will not be closed by administrative order. Road access management information is available at the Thorne Bay Ranger District.

The large scale color map accompanying the EIS presents the road access strategy. The Lab Bay road cards note the roads proposed for closure and have been updated in the Final EIS to show the reasons for closure. Closure points were selected in proximity to natural features such as stream crossings, to facilitate implementation. Implementation of the road closure plan will occur upon completion of the Lab Bay sale, and will be conducted by District personnel.

### WB-16



## Responses to William Baumgartner

have used in the past roads that were deliberately closed, for purposes other than hunting and disturbing wildlife. The closure of collector and local roads is a major issue in this DEIS. Most of the major accidents that I am aware of have taken place on the Forest Highway System. I think all of the users of the road system realize they aren't on the interstate system.

**WB-16**

Page 3-233, 4 Affected Communities. This section is poorly written. conclusions are drawn without factual data. As an example a person in Ketchikan wishing to access the study area by a standard sized pickup needs to take a ferry at the cost of \$69 and about 6 hours travel time to reach the area. If they choose to fly it will cost \$87 or more and take an hour. Flying limits their mobility upon arrival as there is no known public transportation in the area. It is possible to rent a skiff and motor in Whale Pass. Many of the Ketchikan 13,828 population have never been to the area and it could be said never will be in the area. As stated previously demographics are poor. I believe I can state factually that the further removed from the area a person resides the less they care. That is a general rule. The POW Island population over time is becoming less dependent on Ketchikan for support. Ketchikan is still important as a transport hub for jet travel and is the postal center for all of the Island. The postal service also provides the airplane service. A change in the postal service could greatly affect the importance of Ketchikan. The largest community (one with a hospital) to the Lab Bay study area is Wrangel. There is no direct scheduled ferry or air service. That could easily change during the next 50 years.

**WB-17**

Page 3-241 Second paragraph. Actually the Whale Pass LTF was only partially closed. The log boom was left in the water, parts of which subsequently broke up during rough water causing navigation problems and other problems in and near the community. The LTF operator who last used the site also deposited used cables along and on the roads in the area.

**WB-18**

Page 3-242 Recreation and Tourism. The last paragraph. Based on my experience roads add to the sport fish sector adding opportunity by fishers with vehicles. See previous discussion on FH 15 regarding current access.

**WB-19**

Page 3-251 This discussion on subsistence could be different is demographics were considered. The population of Whale Pass is growing as more of the available lots are occupied. Commercial

**WB-20**

**WB-17** The Forest Service does not agree with this comment. The Affected Communities section is based on careful consideration of data from a number of sources. The conclusion that Ketchikan is an affected community is valid.

**WB-18**

The Whale Pass LTF has not been used on a regular basis since the completion of the 1989-94 long-term timber sale offering in the Whale Passage area. It is anticipated that timber harvested near Neck Lake as part of the CPOW Timber Sale will be transferred through the Whale Pass LTF. The ongoing use of the Whale Pass LTF has been clarified in the Final EIS.

**WB-19** Refer to response to WB-8.

**WB-20**

See response to WB-2. Demographics were indeed considered in the analysis.



## Responses to William Baumgartner

WB-20

electric power has been available in most of portions of the community that are occupied since May 1995.

Page 3-279 to 305 All of the discussion on subsistence deer hunting and closing roads etc. ignores the obvious. Deer hunting mostly uses a form of transportation from your home to the area where the deer are. If you live in an area that is roaded and you have a vehicle you usually use the vehicle. If you live in a non roaded area the chances are great you have a boat. Commercial fishers often have boats. When the fishing season is closed they often use the boat for transport. When using a boat for transport it often pays large dividend to hunt when the snow is sufficient to force the deer to lower elevation this increase the deer density and the chance for success is greater. All of the coast is theoretically accessible by boat. Wind, tide and weather limit access to a degree. Loggers on the road system often have boats. They can cover long distances in search of deer. As snow start to fall the roads become impassable particularly at higher elevations and more northern latitudes. If there are only a limited amount of deer to harvest those who use a boat as principal means of transport to harvest deer prefer the latter season and road closures so they have a better chance at the finite number of deer. Those who use trucks for transport prefer the roads remain open and the season is open in the summer. You seem to have taken a stand in this conflict by closing roads. If the deer habitat becomes smaller and less deer are available to harvest there are numerous tools available to increase or improve the habitat. It should be noted that the managers of the federal hunting area have determined the taking of does is permitted this year from July 15 to the end of the year. I'm not sure you should be trying to address harvest when you don't have the authority. The hunting managers have many tools at their disposal to fairly distribute the harvest and the best you can do is help manage the area to provide the habitat consistent with other management goals. Perhaps the human users of the resource should eliminate the competition of from the wolves and the bear. I don't think road closure is a proper management tool for deer but merely tilts the field in favor of boat hunters.

WB-21

WB-21

While the discussion may seem detailed, it does not ignore the obvious. Both road access and boat access patterns of hunting are examined. Road closures are not discussed in any way as a mechanism to favor one over the other, but rather as a management tool available in areas where it may be necessary to reduce hunting pressure in order to maintain adequate populations of deer. This is one of the few management tools available to the Forest Service, since most other tools require action by the Federal Subsistence Board or the State of Alaska.

The doe season permitted in GMU 2 during 1995 was available only to subsistence hunters, for one doe or antlerless deer (out of a bag limit of four), and only during the period of October 15 through December 31.

WB-22

Comment noted. This information does not affect the analysis.

WB-23

The mainline road system is not a designated "visual priority travel route." As a result, detailed analyses concerning the mainline road system are not contained in the EIS. A brief summary of effects, however, is shown in Chapter 3, Visuals section. Your comment regarding views of Thorne Island has been considered and is incorporated in Alternatives 4 and 6, which propose an uneven-age management plan for Thorne Island.

WB-22

Page 3-336 Last sentence. Sometimes the ferry skips going to Wrangel and goes West of Zarembo through Snow Pass. I believe this route is only used off season.

WB-23

Page 3-335 through 341 In addition to views from the water to the uplands there are numerous opportunities for views from the road

## Responses to William Baumgartner

7

system to the water. There are wonderful spots to watch the ferries, tour ships, tugs and fishing vessels working or passing by. There is a magnificent view of Thorne Island just south of the study area. What will the harvest do to that vista? I suppose the road could be closed and the question is academic.

WB-23

Page 3-364 I nominate a boat launch facility at the El Cap work camp to access El Cap by small craft. Another one near the Calder Bay LTF which would access Calder Bay and Shaken Bay to whale watch catch salmon. A boat launch facility consists of 16' wide concrete planks only with no associated float to keep maintenance low. These facilities should generate very high benefit cost ratios.

WB-24

Page 3-385 I could not find any discussion on the State of Alaska on the POW Island area plan. They are the second largest public land managers. I don't recall they propose any timber harvest. The plan is mentioned in the bibliography.

WB-25

## CONCLUSION &amp; RECOMMENDATIONS

FH 30 between the LTF and one half mile beyond the intersection of the 3065 road should be widened to two lanes and surfaced with a dust free surface. The 3065 road should be widened to two lanes along the beach surfaced and a dust pallative used during haul operation. The 3060 road should be surfaced and dust control should be used when hauling on it. Traffic control signs should be placed along and on the 3060 road the 3065 road and FH 30 within the community.

WB-26

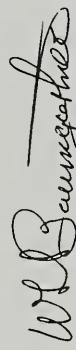
A section addressing the demographics of any community in which timber harvest activities are to take place should be included in the EIS.

WB-27

Install boat launch facilities at El Cap and Calder Bay as suggested above

WB-28

Sincerely

  
William L. Baumgartner  
Phone 846-5216

WB-24 Your suggestion has been relayed to the Thorne Bay Ranger District for use in recreation planning.

WB-25

The influence of the Prince of Wales Island Area Plan (ADNR 1988) and the jurisdiction of the state on overall project planning is discussed in Chapter 1 of the EIS. State-owned, state-selected and private lands are depicted on the oversize color map that accompanies this document. Activities associated with the Lab Bay harvest will not occur on state upland areas with the exception of one or two short segments of newly constructed road (depending upon the alternative) in the vicinity of Whale Pass that would link harvest units within the existing road network. Under Alternative 6 one segment of road would be constructed to provide access to Unit 540-223, then would be closed after harvest. This activity would be consistent with the management guidelines of the POW Area Plan, which identify the area as suitable for commercial/industrial uses, settlement and public facilities.

WB-26

Road maintenance levels for roads constructed under the Lab Bay Sale are presented on Road Cards (Planning Record) and in the Road Management Objectives table (Appendix I). Other forest system roads are maintained according to previously assigned road management objectives. Arterials are maintained under Maintenance Level 3, which means the roads are maintained for travel by a prudent driver in a standard passenger vehicle and are subject to the provisions of the Highway Safety Act. These roads are maintained for use by administrative and passenger vehicles, and logging trucks. Upgrading of road maintenance beyond what is needed for forest management is beyond the scope of this EIS.

WB-27

Community profiles, including demographic information, are included in the Subsistence Resource Report. The detailed description and analysis of the Subsistence Resource Report had to be greatly summarized for the EIS.

WB-28

Your suggestion has been relayed to the Thorne Bay Ranger District for use in recreation planning.



Sept 4 1995

## Responses to Jo Chatham, et al.

JC-1	<p>Seen Lab Bay EIS, We have got two huge books to read on the Lab Bay EIS. We never get these books with time to read them before they're needed. That being the case you get very few replies from most people who have had any time to actually study them.</p>	The Lab Bay comment period of 45 days was extended from its original closing date of September 18 to September 30 to provide the public with additional time to review the document.
JC-2	<p>We maintain the government opened timber harvest up with the promise that four mills could operate for 50 years in the Tongues. One mill never started which should have left all that much more for the other 3. Only 2 mills ever did very much. In reality not even half the timber was taken that was promised to maintain these mills. And even since every living thing has been used to take more and more from the logging industry.</p>	The Forest Service obligation is to provide sufficient timber to KPC over the term of the contract for the purchaser to operate a pulp mill with a capacity of 525 tons/day with an average operational year of 350 days per year. In the latest operating period, 1989-1994, KPC harvested 96.3 percent of their maximum allowable harvest under the contract. The Forest Service is meeting its contractual obligations.
JC-3		Refer to responses to WB-8 and WB-15.
JC-4		Your comment is noted but considered outside the scope of this Project-level EIS.

JC-1

JC-2

JC-3

JC-4

Next we had meeting after meeting over the garbage dump. Even from the Department of environment. And they told us we had virtually no toxic waste in our dump. Ours wouldn't even be considered for shutting down for the next 50 years. It wasn't even two years before they took it away. And with no



## Responses to Jo Chatham, et al.

JC-4	<p>requirement.</p> <p>Next Comes the roads. Price of water Island is noted for it's miles and miles of roads and hunting and fishing. Any business we could start here you are slowly taking away. Logging, hunting, fishing. Even the poor condition of the main road keeps tourists away. Destroys your own vehicles as well as ours. We've spent millions on the main road which is never maintained so needs replace every year. A Sub use of money when it would cost alot less to keep it in shape by maintaining it.</p> <p>We have had meeting after meeting for Spur and Side roads with forest Service. We told them we want some of these roads left open so we could hunt, get berries and such. Again forest Service tells us just tell us which ones and well leave some open for you. And we come the gates even before any meetings or public knowledge. We told which roads we wanted left open. Forest Service is okay well leave them open. Well water bar will need roads. You don't have to gate or water bar. What a waste of money. These roads close themselves in 3 or 4 years through vegetation. Care in and sides.</p> <p>But what happens? Forest Service</p> <p>reaches be very slow with at end of</p>	JC-5	<p>The main roads are administered under Maintenance Level 3, which means that the roads are maintained for travel by a prudent driver in a standard passenger vehicle and are subject to the provisions of the Highway Safety Act. These roads are maintained for use by administrative and passenger vehicles, and logging trucks. Upgrading of road beyond that required for forest management is beyond the scope of this EIS.</p>
JC-6	<p>Refer to responses to WB-8 and WB-15.</p>	JC-6	
JC-7		JC-7	

# Responses to Jo Chatham, et al.

JC-7

Refer to responses to WB-8 and WB-15.

JC-8

The Queen Charlotte goshawk, located in coastal Southeast Alaska and British Columbia, Canada (USFWS 1994), is native to Southeast Alaska. Studies conducted in Southeast Alaska indicate that goshawks consistently demonstrate a preference for mature or old-growth forest, and an avoidance of all other habitat types. This habitat occurs both on land available for timber harvest and on land not available for harvest. Nearly 1 million acres of productive old growth have been harvested and converted into early seral forest stand structure in Southeast Alaska. This conversion of a selected habitat type to an avoided habitat type has led biologists to the conclusion that goshawk habitat capability has declined in Southeast Alaska. For a more detailed discussion of the Queen Charlotte goshawk, please refer to the TES section of the Draft EIS and Final EIS.

JC-9

The Alexander Archipelago wolf is a species of concern on the Tongass National Forest, and was recently petitioned for listing as threatened under the Endangered Species Act. Wolves on Prince of Wales Island are currently being studied by Dave Person, a University of Alaska graduate student, to determine habitat use and stability of populations on the island. A summary of his results are presented in Chapter 3 of the Final EIS in the Wildlife section.

roads we want opened to log. They log it and ban this is a new word and instant water bar. AS I write today every road left open is being water barred. This isn't even logging any more. This is all other uses being taken away from just pleasure driving, tourist, hunters, trappers & berry pickers.

Ninety percent of Alaskan is locked up anyway. The 10% left to people and loggers is still being whittled away at. You use the goshawk which isn't even native to Alaska. They have just started moving in & every year there are more. Which is an increase not a decrease. And from studies I've seen these birds only live in land that you have marked that could be used to log. There must not be a single goshawk on the other 90% of land government has locked up. Truth is you don't know and you don't care. Just shut down logging.

Same with the wolf. We have more than we know what to do with. It's other states no longer have them. Maybe we could send them some of ours instead of making total fools of ourselves as was done when government decided to trap and shoot them with pop guns.

And deer! Can't log, it ruins habitat for deer. Or so we are told to stop the logging. Shut down. But what do we have

JC-7

JC-8

JC-9

JC-10

## Responses to Jo Chatham, et al.

- JC-10 Now? Why we have so many deer that all of a sudden they are starving to death. So we better open up a doe season. And when do we get a doe season? Why right at the end of the year when they are with fawn of course. Makes lots of sense.
- JC-11 And you do all this when you have no way to enforce or patrol all the values and regulations you put in because of government. Cut backs.
- JC-12 All these books and books you've put out on studies to do all this. How much did that cost us? And all these studies aren't scientific studies. You haven't had time or manpower to do that let alone money. We have more fish now than in 30 years of fishing. Logging don't hurt the fish. Foreign countries did + government let them by not having manpower or willingness to stop the netting + poaching.
- JC-13 These studies - every one states we don't have time to study in our area so we call other states or read a book. All that means is you don't have a clue what you doing you have no idea what affect anything has on anything.
- JC-14 But well tell you what 90% of Alaska is locked up. No other state has 90% of their land locked up. You want to save and protect. Why don't you save and protect + rebuild wilderness by locking

JC-10 Please refer to the Chapter 3, Wildlife section, deer subsection of the Draft EIS and Final EIS for a discussion of deer winter range requirements.

JC-11 Enforcement of hunting regulations is primarily the jurisdiction of Alaska Department of Fish and Game.

JC-12 The EIS is based on site-specific field verified information concerning proposed harvest units, roads, and natural resources. Costs of planning for timber management are discussed in response to TCS-1.



## Responses to Jo Chatham, et al.

JC-13

up 90% of every state in America? Then you'd be doing something. We wouldn't have any shortage of anything unless we continue like we are now.

Consider the news we hear lately. Can't log up North Alaska. We have to save wildlife & pristine wilderness. Along come the bugs and they are killing all the pristine wilderness and then go the animals and the growth that's so important.

The Southern States with the pine. Don't log, plant trees. And they did. And along comes the bugs cause all this planting made them soar where they wouldn't & couldn't have before! Result they have to clear cut every pine tree down now to stop the bugs. Even worse these pine may not even be useful for even pulp! Total waste for people, forget all wildlife that depended on these trees. We haven't saved us, logging, wild life we only succeeded in total destruction of everything including our freedom.

We believe you should honor your contracts. Throw out these studies and do a Scientific Study and be sure about it. It's waste up time. The bugs are at work even in the pristine Tongass. We better decide to log at least the diseased trees or lose all the Tongass

JC-13

The state of Alaska has a high percentage of federally-owned lands vs. privately-owned lands. While there are restrictions on timber harvest and other development activities on some of these lands to protect the high recreational and ecological values, much of the area is under active management for resource extraction. The natural resource values of Alaska's federal lands cannot be replaced by "locking up" lands in the other 49 states. Nor is the bounty of Alaska's wildlands endless; "shortages" cannot be avoided in the long-term simply by opening all lands to natural resource extraction.

JC-14

Your comment regarding the influence of bugs on the management of our National Forests and the need for continued harvest is noted. While the Lab Bay Project Area does not have a forest insect and disease problem at this time, the subject of forest health is addressed in the EIS.

JC-14

JC-15

## Responses to Jo Chatham, et al.

JC-15

along with the wildlife it holds. Watch what other States do and learn from their mistakes. Don't blindly follow.

People have logged northern Maine ever since the 1500's. Great Northern pulp mills on the very land my people owned settled and logged. They are still logging there today. Mt Katahdin is still beautiful. They even have deer, moose, bear as they have always had.

Sincerely  
Jo Chatham  
Rayford Chatham  
John Kainyer  
Donna Lauch  
Charles Lauch  
Ron Lauch  
Sharon Pollock  
plainie Ryan  
Spice Lauch  
Valerie Wacker

JC-15

Refer to response to JC-2. The information presented in the EIS is based on field evaluations and scientific studies. Resource specialists used the best information available to them at the time regarding the effects of timber harvest. The results of these analyses are presented in the EIS and individual resource reports.

24 September, 1995

Forest Supervisor Ketchikan Area,  
Tongass National Forest,  
Federal Building,  
Ketchikan, AK 99901

Dear Sirs,

Reference File Code: 1950, Lab Bay Draft Environmental Impact Statement, Ketchikan Pulp Company Long-Term Timber Sale Contract, Summary, as modified by your letter of 29 August, 1995.

#### MC-1

I have reviewed the reference document and I strongly recommend approval of Alternative 3, with the inclusion of the Uneven Aged Management Plan for Thorne Island instead of the Thorne Island Plan now included with Alternative 3.

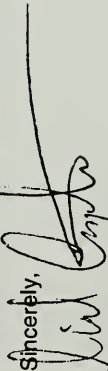
#### MC-2

This alternative, as modified above, would provide the greatest environmental protection for the entire ecosystem. It would protect the High Vulnerability Karst areas thus providing greater support for fisheries and wildlife habitat and aid the subsistence harvest. It would reduce the road building impact on the few remaining roadless areas, particularly on Thorne Island.

Inclusion of the Uneven Aged Management Plan for Thorne Island, in addition to protecting the roadless areas, would reduce the adverse impact on fisheries as well as improving wild life habitat. It would also reduce the possibility of damaging cultural sites, known and unknown.

Alternative 3, as modified above, is strongly recommended for approval.

Sincerely,



Michael Compton  
P.O. Box 293,  
Yelm, WA 98597  
(206) 535-5144

## Responses to Michael Compton

**MC-1 and MC-2** Your comments supporting Alternative 3 with the inclusion of the Thorne Island Uneven-aged Management Plan was considered along with others and is reflected in Alternative 6 of the Final EIS.



Dear Mr. Vaughn

Sept. 3, 1995

## Responses to Leslie Fahey

LF-1

The EIS and the Subsistence Resource Report discuss potential effects of the proposed action on quality of life in Port Protection, Point Baker, and Whale Pass. This is a concern that has been considered. Similarly, all roads have been evaluated in terms of their long-term effects and are included in the overall road access management plan. Many roads are to be closed once timber harvest activity is completed.

LF-2

Your comment supporting the No Action alternative is noted.

LF-3

Your comment regarding specific unit concerns was considered along with others and is reflected in the Final EIS under Alternative 6 which does not propose to harvest units 529-270, 259, and 257. Unit 529-286 continues to be excluded from Alternative 3, in addition to Alternatives 5 and 6.

I am writing to comment on the Lab Bay Project Area EIS. I am a resident of Port Protection and feel that the choice of alternatives listed in the EIS will have a major impact on the quality of life in Port Protection. I live a subsistence lifestyle. Timber harvest will have a major impact on my lifestyle and I am particularly opposed to the proposed timber sales for this region. For the same reason, I support closure of all secondary roads.

LF-1

After review of the EIS, I believe that alternative #1 is the BEST alternative for management of the Lab Bay Project Area. All the remaining alternatives have an adverse impact on the forest, the local communities, karst geology, subsistence, water quality, water availability for communities, fish and game, wildlife habitat etc. Essentially all areas studied in the EIS!

LF-2

Of the other alternatives listed in the EIS, only alternative #3 could be considered and it could only be considered if the following harvest units

LF-3

## Responses to Leslie Fahey

The Socio-Economics section of the EIS provides a detailed analysis of the economics of the proposed alternatives. Costs of timber sale planning are discussed in response to TCS-1.

Your comment was considered along with others, and is reflected under Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road. The Final EIS has been revised to show the correct estimate for the road construction at \$128,000. The Tie Road would not be located on high vulnerability karst.

LF-4

LF-5

in VCU 529 were eliminated: units 270, 286, 259 and 257. Alternative #3 contains an estimate of a \$1.3 MM profit from sales of 66MMBF of timber. This seems to be a very low value for that much timber. How many of us could operate a business that produced a return of that level on an investment of 66MMBF??

This looks like another subsidy where the U.S. Forest Service is using taxpayer money irresponsibly. It is also hard to believe the estimate showing a \$1.3 MM profit is accurate since past sales of the Tongass timber have been conducted with major losses in money to the U.S. taxpayer. After all this is a National Forest, not an Alaska state forest.

I would also like to address the proposal for construction of the Calder Bay / Lab Bay tie road. I oppose this road construction in the strongest terms. It is a travesty to spend \$128 MM for this road. The possibility of recovering these costs through timber sales is remote to the point of absurdity. The road borders a LUDL

LF-3

LF-4

LF-5



## Responses to Leslie Fahey

- LF-6 The Forest Service has carefully considered the comments and input provided by local residents and subsistence users of the project area, beginning with project scoping and continuing to the present.
- LF-7 Chapter 3 in the Final EIS fully discloses the direct, indirect, and cumulative effects of the Lab Bay proposed action on the various resources.

LF-5 area allowing easy access into it. It will also impact high vulnerability karst topography and this alone should remove the road from consideration.

In my evaluation of the EIS it is apparent the Forest Service does not feel that people who live in local communities deserve any consideration. The Forest Service seems to favor timber interests at the expense of maintaining a community where subsistence is possible and the quality of life is important. Most loggers are transients and do not have any concern for the local communities where they stay only long enough to clear the land.

It must be remembered that we live in the north where reproductive cycles for a tree are long and slow. Any damage we do to streams and lakes, to fish habitats and game habitats or any other of the vast array of delicate pieces of "the web" will take over 100 years to correct. The decision on how to manage the Lab Bay Project Area must be done with

LF-7



careful consideration of what might happen if the wrong decision is made.

Thank you for giving me this opportunity to comment on the Lab Bay EIS.

Sincerely, Leslie J. Fahen  
P.O. Box 16  
Point Baker, AK.  
99927

LF-7

## Responses to William Fannemel

WF-1

The Lab Bay ID Team was aware of the domestic watershed below unit 538-210 (see Chapter 3, Water Resources). Mitigation was designed for this unit and access road by the ID Team hydrologist to reduce the potential for adverse effects to the domestic water supply. Proposed mitigation includes an extended no-harvest buffer between the water supply stream and the unit boundary, road closure after harvest, and use of chemical toilets during road construction and harvest. Alternative 6 of the Final EIS defers harvest on this unit.

USDA - FOREST SERVICE	
<b>RECEIVED</b>	
9-18-15	
KETCHIKAN AREA	
INIT.	ACT. INFO DATE
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September 13, 1995

U.S. FOREST SERVICE  
SUPERVISOR, KETCHIKAN AREA  
Tongass National Forest  
Federal Building  
Ketchikan, AK 99901

RE: LAB BAY E.I.S.  
HARVEST UNIT 538-210

GENTLEMEN:

### I. BACKGROUND

Whales Resort, owned by Whales Resort, Inc., an Alaska Corporation, has operated seasonally since 1991 (5 years). It represents an investment of over four million dollars, and employs over 25 people. Whales Resort is a remote fly-in luxury fishing resort. Guests come to the resort to enjoy the quiet natural setting, as well as the fishing. The property is also the residence of William and Noble Fannemel.

### II. REVIEW OF DRAFT E.I.S.

After review of the draft E.I.S., it is apparent that Harvest Unit 538-210 is located uphill from, and quite near the Whales Resort property.

### III. FACTORS AGAINST HARVESTING UNIT 538-210

#### A. Impairment or Interruption to Drinking Water

Whales Resort obtains all of its potable water for drinking, as well as bathing, and all other uses from a spring and creek located well above the resort, and in the water shed below the proposed harvest unit. This source supplies water for the support of up to 50 people (25 showers, and 29 toilets and washrooms). We have 10,000 gallon water storage tank. during past summer droughts, the water supply has been marginal, but has never failed. It is our belief, and the opinion of our engineers, that any harvest in 538-210 will likely result in pollution in the form of silt, or other run off during heavy rains, and/or interruption during drought due to inability of the soil to hold the water

WF-1

## Responses to William Fannemel

- WF-2** Your opposition to harvesting unit 538-210, which is located in the vicinity of Whales Resort, has been considered. This unit is not proposed for harvest under Alternative 6 of the Final EIS, due to visuals concerns. If selected for harvest, it is expected that road construction and logging operations could be completed in one season. Thus, effects of harvest-related noise on nearby lands would be limited in duration.
- WF-3** Unit 538-210 does not include any areas with high mass movement potential. This unit has been deferred from harvest under Alternative 6 of the Final EIS due to visuals concerns allowing the opportunity for additional hydrologic and soil investigations.
- WF-4** Refer to response to WF-1.

above the spring. Either of the aforementioned occurrences would be catastrophic to our business, and cause irreparable damage. In the public meeting on 17 August at Whale Pass, I asked if harza, its engineers and the U.S. Forest Service will not guarantee that the logging of 538-210 will not impair the water supply, they are implying that it could be impaired!

**WF-1**

### B. Noise and Other Pollution during Logging

Any logging operations during our season would create noise and other pollution that will cause negative reactions from clientele who are paying very high prices for the peace and quiet of a remote retreat. This could seriously damage our business.

**WF-2**

### C. Soil Instability

In 1993, the summer was extremely dry. In late October, there was a severe rain storm that caused major damage all over Prince of Wales Island. Whales Resort incurred some soil instability that resulted in soil and rock movement, damage to buildings and foundations. It required major repairs and re-stabilization of the slope and foundations. The construction work was done by Poole Engineering of Ketchikan, and damages cost us over \$135,000. Copies of the construction contract and photos are available to substantiate this statement. It is the opinion of our soil engineers, and our company that any logging in the water shed above Whales Resort (i.e. 538-210) could result in increased surface or subsurface runoff, and create further instability and cause damage to the resort.

**WF-3**

### III. WE OPPOSE ANY HARVEST OF 538-210 OR ANY AREA ABOVE OR IN THE VICINITY OF WHALES RESORT

CERTAINLY, DAMAGE TO A MAJOR BUSINESS AND RESIDENCE, AND RESULTANT LOSS OF EMPLOYMENT AND OTHER INCOME TO THE COMMUNITY (WE SPEND OVER \$300,000 LOCALLY) CANNOT BE IN CONFORMANCE WITH THE U.S. FOREST SERVICE GUIDELINES FOR MANAGEMENT OF THE NATIONAL FOREST.

**WF-4**

SURELY, IN THE ENTIRE TONGASS NATIONAL FOREST, ONE ALTERNATIVE AREA OF 30 ACRES CAN BE FOUND THAT WILL NOT THREATEN OR DAMAGE A PRIVATE BUSINESS AND RESIDENCE.

### IV. ACTION

- A. Should this harvest unit (538-210) or any unit in our water shed, or any cutting of timber, be in any alternative, we will appeal as provided by law.
- B. Should we lose our appeal, we will seek an injunction.

**WF-5**

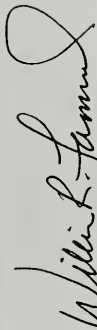


WF-5

C. Should that fail, and any harvest occur, when any of the above predicted events occur, we will sue all parties responsible for allowing this travesty to occur. Please note that this means both responsible individuals and organizations, both public, private and governmental.

We will seek both actual and punitive damages, and, since the conditions were identified and ignored, we will win, and collect same.

We would much prefer to be allowed the quiet enjoyment of our rights to operate our business without danger, damage, interruption, or disaster.

  
William R. Fannemel  
President/Owner

cc: Anne Archie, USFS Thorne Bay Dist.  
Clifford Smith, Esq.  
Rep. Stevens  
Rep. Murkowski  
Rep. Johnston  
Rep. Jerry Macke  
Rep. Robin Taylor

Responses to William Fannemel

WF-5 Refer to response to WF-1.

September 13, 1995

U.S. FOREST SERVICE  
SUPERVISOR, KETCHIKAN AREA  
Tongass National Forest  
Federal Building  
Ketchikan, AK 99901

RE: LAB BAY E.I.S.  
LOGGING OF THORNE ISLAND

GENTLEMEN:

## I. BACKGROUND

Whales Resort, owned by Whales Resort, Inc., an Alaska Corporation, has operated seasonally since 1991(5 years). It represents an investment of over four million dollars, and employs over 25 people. Whales Resort is a remote fly-in luxury fishing resort. Guests come to the resort to enjoy the quiet natural setting, as well as the fishing. The property is also the residence of William and Noble Fannemel.

## II. REGARDING THORNE ISLAND

The draft E.I.S. shows clear cut harvest units, 15+ miles of roads and a log transfer facility as the preferred alternative. Helilogging is shown as one of the alternatives.

## III. COMMENTARY

We expect close to 500 guests to visit our resort next year, plus an additional 30-50 people per day will fly out for lunch on a new program with Ketchikan Air and one of the cruise line ships. All of these people fly over Thorne Island every day on their way to go fishing. All of our visitors have already commented negatively on the clear cutting they see to date, and positively how none is visible in Whales Passage, and Thorne Island. They do not believe that our government will "ruin" this small island.

## IV. POINTS TO PONDER

- WF-6 [ 1. What earthly good will 15 miles of road do on this island?
- WF-7 [ 2. Isn't it much more expensive to barge equipment for logging and road building etc. to this island, than just extending existing roads on Prince of Wales Island?

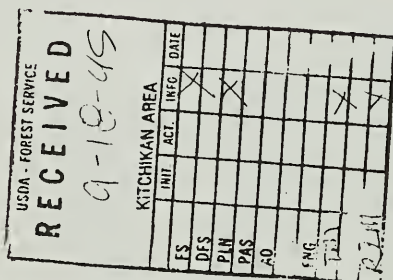
## Responses to William Fannemel

WF-6

Alternative 6 of the Final EIS proposes an uneven-aged management plan for Thorne Island which would rely on helicopter yarding and would not require road construction. If conventional, roaded harvest were selected for Thorne Island, the constructed roads would provide access for the current harvest entry, as well as for future entries.

WF-7

The expense required to move equipment back into the Lab Bay Project Area and extend existing roads is similar to that of moving equipment to Thorne Island by barge. Alternative 6 of the Final EIS proposes an uneven-aged management plan for Thorne Island, which would require no road construction.



## Responses to William Fannemel

WF-8

3. We already have one log transfer facility at Whales Passage. Why concentrate two in such a small area? (The existing one has been unused and a "mess" for two years.)

A second LTF in the Whale Passage area would be required to harvest Thorne Island if a conventional roaded harvest system is selected. The Thorne Island LTF is not necessary for the harvest of Thorne Island using the uneven-aged management system as described in Alternative 6 of the Final EIS.

WF-9

4. Whales Passage is an existing resort, and residential area. Why must you insist on activities that are incompatible with uses? Why not create some units elsewhere? For example, there is no private property along the entire coast from Whales Passage to Point Baker. Can't you find a few harvest units in that stretch (without ruining Salmon Bay Lake)?

WF-9

The Lab Bay Logging System and Transportation Analysis (LSTA) evaluates all suitable timberland within the Lab Bay Project Area including the area between Whale Pass and Port Protection. The full unit pool, Alternative 2, includes all units that are feasible to harvest at this time under current standards and guidelines. The other action alternatives reflect subsets of the unit pool, designed to address significant issues in the Project Area.

WF-10

5. Construction barges, log dump, floating camp, etc. - all will disrupt the remote tranquil Alaska destination that our guests come to enjoy.

The lands selected for harvest in the Lab Bay Project Area are designated as LUD's III and IV in the current Forest Plan (TLMP 1979, as amended). These lands are to be used to support timber harvest as well as other activities. Other Land Use Designations (such as LUD II, Wilderness, Special Interest Area) are managed by the Forest Service to remain in a natural or near-natural state, allowing primitive and wilderness recreation opportunities.

WF-11

6. Many say that any logging on Thorne Island is much more expensive than on Prince of Wales.

V. POSITION

WE OPPOSE ANY LOGGING ON THORNE ISLAND. WE BELIEVE THAT IT WILL HAVE A NEGATIVE IMPACT ON OUR BUSINESS BOTH DURING THE LOGGING AND AFTER DUE TO THE VISUAL POLLUTION.

WF-10

The lands selected for harvest in the Lab Bay Project Area are designated as LUD's III and IV in the current Forest Plan (TLMP 1979, as amended). These lands are to be used to support timber harvest as well as other activities. Other Land Use Designations (such as LUD II, Wilderness, Special Interest Area) are managed by the Forest Service to remain in a natural or near-natural state, allowing primitive and wilderness recreation opportunities.

WF-11

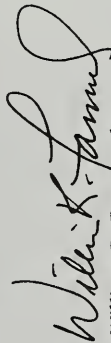
Refer to Appendix E of the Final EIS.

cc: Anne Archie, USFS thorne Bay Dist.  
Clifford Smith, Esq.  
Rep. Stevens  
Rep. Murkowski  
Rep. Johnston  
Rep. Jerry Macke  
Rep. Robin Taylor

The helicopter yarding costs used in the economic analysis for the Thorne Island Uneven-Aged Management Plan include a factor to account for slightly greater costs associated with yarding to an offshore barge.

WF-12

In response to your comment, and other similar comments regarding the visual, wildlife, and subsistence values of Thorne Island, Alternative 6 of the Final EIS proposes harvest on Thorne Island under an uneven-aged management plan. This plan would require no road construction, no LTF construction, and would result in helicopter yarding of approximately 109 patch cuts, each approximately 2 acres in size. Implementation of this action alternative would result in the least visual impact to the landscape, and would likely entail only one season of active logging operations.



William R. Fannemel  
President/Owner



Box 14  
Point Baker, AK.  
99927  
September 24, 1995

Forest Supervisor  
Ketchikan Administrative Area  
Tongass National Forest  
Federal Building  
Ketchikan, AK. 99901

Dear Federal Foresters,

The following is my response to the Lab Bay Project Draft EIS.

First, thank you for deferring the public hearing and comment deadline to accommodate our fishing fleet. Thank you also for removing the two units that abut the State line and threaten our Port Protection water system. And thank you for removing the units from Protection Head.

Second, I would like to point out the following omissions or errors: 1. Sockeye should be used as an indicator species, since Red and Selmon Bay Lakes and drainages are important sockeye producers and sockeye needs are different from those of coho and humpy. 2. Dynamiting in this area, if done at all, should occur in early spring, before spawning and egg laying, as dynamite shock waves destroy the eggs. Fish biologists should be consulted to determine the least destructive time in the reproductive cycle. 3. What effects will all the dynamiting for roads have on underlying karst? 4. Subsistence socio-economics are omitted from the socio-economic section of the EIS. 5. The local Fish and Game Advisory Committee negotiated at the Forest Service's request, to have a floating camp in El Cap rather than the Calder Tie Road. That road should therefore be dropped from all alternatives. 6. If, in Alternative 3, 66 MBF of timber will only net us (the Federal Government) \$427,333 per year for three years, why are we selling it? 7. Can Central and South Prince of Wales support increased hunting pressure when our area is restricted? Does money exist to administer and enforce the subsistence-only hunting regulations which must now be imposed in this area?

I spent over a week studying this EIS, and found overwhelming reasons to cease timber harvest, and none to continue it. To quote the EIS, "All the development alternatives have a negative present net value." The allowed \$427,333 per year "profit" to the Federal Government is not really real. And this is without subtracting the value of the loss of non-subsistence hunting, the loss of subsistence deer and

## Responses to Gretchen Goldstein

### GG-1

Sockeye salmon are not identified in the current Forest Plan (TLMP 1979, as amended) as an indicator species. Sockeye habitat needs are considered during timber sale planning and layout of units and roads. For example, 100-foot minimum buffers are maintained on class I and II streams, and roads are sited outside of stream buffers and riparian zones wherever practicable.

### GG-2

Blasting is performed according to Forest Service guidelines which are based on field effects data collected on the Tongass. Fisheries biologists review blasting plans prior to implementation, and routinely apply timing restrictions in the proximity of anadromous and important resident fish streams. Generally, blasting is not conducted in close proximity to streams, and rock pits are intentionally located away from streams. Rock pit locations are also subject to review by fisheries biologists.

### GG-3

Alternative 6 avoids construction of roads on high vulnerability karst. Geotechnical studies are performed as appropriate for road building, and are recommended for any future road construction over karst.

### GG-4

Potential effects upon subsistence are treated in detail in the Subsistence section of the EIS. This is due to their importance, under Section 810 of ANILCA. Alternative 6 of the Final EIS does not propose construction of the Calder Tie Road.

### GG-5

For the 1989-94 long term timber sale offering, a floating camp at Calder was determined to be most appropriate. For subsequent sales, issues of road access and sale implementation are typically re-examined. In response to public input during scoping, the Calder Tie Road was evaluated and identified for possible inclusion in any of the action alternatives. Public comment on the Draft EIS heavily opposed construction of the Tie Road; thus, it has been excluded from Alternative 6.

### GG-6

As discussed under the Purpose and Need for Action in Chapter 1, harvest is proposed for the Lab Bay Project Area to provide timber volume that will contribute, in part, to a 3-year timber supply requirement of the KPC contract.

Responses to Gretchen Goldstein

Box 14  
Point Baker, AK.  
99927  
September 24, 1995

Forest Supervisor  
Ketchikan Administrative Area  
Tongass National Forest  
Federal Building  
Ketchikan, AK. 99901

Dear Federal Foresters,

The following is my response to the Lab Bay Project Draft EIS.

First, thank you for deferring the public hearing and comment deadline to accomodate our fishing fleet. Thank you also for removing the two units that abut the State line and threaten our Port Protection water system. And thank you for removing the units from Protection Head.

Second, I would like to point out the following omissions or errors: 1. Sockeye should be used as an indicator species, since Red and Selmon Bay Lakes and drainages are important sockeye producers and sockeye needs are different from those of coho and humpy. 2. Dynamiting in this area, if done at all, should occur in early spring, before spawning and ed. laying, as dynamite shock waves destroy the eggs. Fish biologists should be consulted to determine the least destructive time in the reproductive cycle. 3. What effects will the dynamiting for roads have on underlying karst? 4. Subsistence socio-economics are omitted from the socio-economic section of the EIS. 5. The local Fish and Game advisory committee negotiated at the Forest Service's request, to have a floating camp in El Cap rather than the Calder Tie Road. That road should therefore be dropped from all alternatives. 6. If, in Alternative 3, 66 MBF of timber will only net us (the Federal Government) \$427,333 per year for three years, why are we selling it? 7. Can Central and South Prince of Wales support increased hunting pressure when our area is restricted? Does money exist to administer and enforce the subsistence-only hunting regulations which must now be imposed in this area?

I spent over a week studying this EIS, and found overwhelming reasons to cease timber harvest, and none to continue it. To quote the EIS, "All the development alternatives have a negative present net value." The alleged \$427,333 per year "profit" to the Federal Government is not really real. And this is without subtracting the value of the loss of non-subsistence hunting, the loss of subsistence deer and

GG-7 While subsistence users will at some point be affected by continued timber harvest, the date when restrictions upon nonsubsistence hunting would be imposed if at all, is uncertain. Determinations regarding restrictions on non-subsistence hunting will be made by the Federal Subsistence Board. Speculation on future budget allocations for subsistence regulation enforcement is beyond the scope of this project.

GG-8 Alternative 6 is proposed in response to public comment on the Draft EIS. This alternative avoids harvest in high value subsistence areas, avoids harvest on high vulnerability karst, and emphasizes protection of important wildlife and visuals resources. The Final EIS presents updated environmental consequences and economic outputs for the alternatives, including Alternative 6.



## Responses to Gretchen Goldstein

-2-

- GG-8** beer, the loss of sockeye habitat, the loss of world-class caves, the loss of wilderness recreation potential, or the loss of wildlife habitat. It is a heavy price to pay for an average of 94 jobs for 4 years. I found all the above information in the EIS. What I did not find was any proof that logging at a loss, and destroying so many other forest values in the process is necessary and consistent with sound management of public lands.
- GG-9** For over 20 years the villages of Point Baker and Port Protection have tried to protect themselves against the adverse effects of clearcut logging on fish and wildlife habitat. Despite our input based on local knowledge and experience, logging has continued and EIS's have claimed it was having "no significant impact" on our subsistence. Now we are told that even with No Action, our subsistence deer hunting needs restrictions to protect it, and with any Action Alternative even our subsistence uses themselves will need restriction.
- GG-10** No economic value is assigned to this loss. No socioeconomic effects are considered. No justification is given for not protecting the remaining habitat in the area, although the EIS states that habitat protection is the only mitigation possible. And they call this "Multiple Use".
- GG-11** For these reasons, No Action for the remainder of the contract period is the only choice I can support.
- GG-12** Since it is unlikely that No Action will be the chosen alternative, I have these comments about Alternative 3, the preferred alternative. I strongly support the provision that will close most of the roads after logging is done. I encourage the Forest Service to honor the deal we made, and eliminate the Calder Tie Road from all alternatives. Cutting units 529-270 and 286 should be eliminated from the harvest plan, to provide a bit of buffer around the State land our villages are on, in the interests of multiple use. Finally, if you are on, in the interests of multiple use. Every one of these units is sensitive karst, and/or fish spawning and rearing habitat, and/or subsistence hunting land, and/or wilderness recreation area, and/or bird and wildlife habitat. Dynamiting, roading, clearcutting and hauling out the trees are going to have severe negative impacts on an already badly impacted area, no matter how carefully it is done.
- GG-13** Thank you for the chance to comment.
- GG-14** Sincerely,  
*Gretchen Goldstein*  
Gretchen Goldstein
- GG-9** The potential effects to deer habitat and subsistence harvest of deer are displayed in the Draft and Final EIS.
- GG-10** Your comment in support of the No Action Alternative is noted.
- GG-11** Your comment supporting road closures is noted.
- GG-12** Your comment was considered along with others, and is reflected under Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road.
- Refer also to response to GG-5.
- GG-13** Your comment was considered and is reflected in the Final EIS under Alternatives 5 and 6 which exclude both units 529-270 and 286 from harvest. Unit 529-286 is also excluded from Alternatives 3 and 5. In addition, unit 529-270 continues to be excluded from Alternative 4.
- GG-14** Refer to response to AK-28 for a detailed discussion of monitoring.



September 26, 1995

Forest Supervisor  
Ketchikan Area  
Tongass National Forest

Attn: Lab Bay EIS  
Federal Building  
Ketchikan, AK 99901

RE: Lab Bay Draft EIS - Our Comments

According to the Lab Bay Project Area Draft EIS, the Lab Bay area has been offered to be clear cut for two main reasons: 1) It is expedient, and 2) an extensive road network is in place. We believe that a decision that will cause the forest to be "highly modified ... over the next 150 years" should not rest upon these two reasons. We are dismayed that the timber harvest philosophy has changed little since the early days of gypo logging when the biggest and the best were taken from the most easily accessed places.

We have been Alaskan residents for thirty years. We have been in private business for all of those years and have been property owners in the Whale Pass Subdivision since 1983. Our property, Lot 12 in Block 10, faces Thorne Island to the East and backs state forest land. We are concerned about the effects upon the wildlife, the views and the karst areas of the entire Lab Bay area by clear cuts. However, we will limit our specific comments to the clear cuts in relation to our property.

We are very concerned about the proposed logging in that area from primarily two aspects. The first is the potential effect upon our water supply. The second is our viewshed.

Our property's water supply is dependent upon a small stream which flows down the mountain near our house. The proposed Lab Bay timber harvest in 540.0 - 221.0 and possibly 210.0 appears to have a potential detrimental effect upon that stream and thus our domestic water source. We are disturbed that the same Proposed Timber Units in these VCU's appear in all four alternatives.

Second, Thorne Island, 551.0 is part of our easterly and southeasterly view. We urge you to consider only helicopter logging for that area.

We believe that timber can be taken from some of the many other areas of the Tongass rather than the harvest being condensed to the northern part of Prince of Wales Island. We prefer Alternative 1 because of this reason. Next we favor Alternative 4 but with karst areas protected.

Sincerely,



Ralph C. Gregory  
W. Joy Gregory

office located at 1104 Dunton

## Responses to Ralph Gregory

- RG-1** The Forest Service does not agree with your comment. The reasons for scheduling the Lab Bay Sale are described in detail in Appendix A of the Draft EIS. An updated Appendix A is provided in the Final EIS.
- RG-2** Unit 540-221, as planned and field verified, does not contain any stream channels, but is located upslope of the defined channel of concern. The Water Resources section of Chapter 3 of the Final EIS has been revised to include unit 540-221 as located within a domestic water supply watershed. Alternative 6 of the Final EIS considers your comment, and other similar comments, and defers harvest on any units located within a domestic water supply watershed.
- RG-3** Your comment was considered along with others and is reflected in the Final EIS under Alternative 6, which would harvest timber on Thorne Island using helicopters under an uneven-aged management scenario.
- RG-4** Your comments in support of the No Action Alternative and Alternative 4 are noted. Alternative 6 of the Final EIS incorporates elements of Alternative 4 (protection of high value wildlife and subsistence areas) and Alternative 3 (protection of high vulnerability karst resources). Refer to Appendix A of the EIS for a detailed description of the reasons for scheduling the Lab Bay Sale at this time.

RG-1

RG-2

RG-3

RG-4

## Responses to Karen Howell

7202 South Pass Road  
Sumas, WA 98295  
September 15, 1995

Forest Supervisor  
Ketchikan Area  
Tongass National Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan, AK 99901

### KH-1

An EIS was prepared for the Lab Bay Project Area because the effects of harvest were expected to be significant. The EIS discloses the range of effects by alternative and by resource. This allows the Decision Maker to determine how to serve the overall best interest of the nation.

Alternative 6 was developed in response to public comment on the Draft EIS, and addresses concern for high value karst, wildlife, subsistence, and visuals resources.

### KH-2

The TLMF (1979, as amended) desired future condition statements have undergone public review and incorporate public comments. National Forest System Lands are managed for multiple uses including timber harvest and wilderness.

### Comments on the Draft EIS:

The Lab Bay Project Area Draft EIS for the KPC Long Term Timber Sale Contract is a well-put-together, well-written, interesting and informative document. Compliments to Harza, Inc for a thoroughly researched and readable report.

The findings reported in Chapter 3 point to a clear conclusion that further forest removal ("timber harvest") in the Lab Bay project area would be a mistake. The value of old growth forest-as-pulp is scarcely justified against the resulting losses in wildlife habitat, reduced subsistence use of deer by rural residents, lost future revenues from tourism and recreation, damage to cave resources, the overall uncertainty of forest regeneration., and the inevitable unknown costs of large-scale disturbance of natural environments.

### KH-1

The term "desired future condition" is particularly troubling. It implies that the forest, which has existed and evolved for thousands of years without human management, is to be converted to a fiber farm for the benefit of shareholders in Ketchikan Pulp Company. There is no justification for this view other than a continuation of an attitude dating from 40 or 50 years ago, when natural resources were often considered to be limitless. Once the current KPC contract expires, it must not be renewed. The value of untouched old-growth north temperate rainforest is

### KH-2

## Responses to Karen Howell

KH-2

only beginning to be discovered. Page 3-240 addresses this point in stating that old growth timber harvest may be considered to be an extraction of a nonrenewable resource. The same page refers to a study that showed the people of the United States are willing to pay a huge amount of money to avoid habitat degradation

KH-3

Of course, Ketchikan is a timber town. We must consider jobs. I am a woodworker. I earn a family income making products from less than 3000 board feet of lumber a year. Some simple calculations from figures shown in Table 2 in the Summary reveal that it takes about 1000 acres of public land to support a timber worker (assuming a 100 year rotation). Surely some creative management could clear the way for real value-added industry which could supply many more jobs and also keep the forest whole.

KH-4

Tourism is the real growth industry in the Tongass. P. 3-235 cites impressive statistics about the millions spent by anglers and tourists in Southeast Alaska. By destroying the forest we destroy the future of tourism. UO's may be enough for cruise ship passengers, but they are not the only tourists in Southeast. More and more people are discovering the Tongass, and want to see what is really there, up close. Cumulative effects (table 3-92) show severe declines in estimated populations of MIS species by 2054--an indication of how little will be left for the eco-tourist and backcountry angler.

KH-5

Of course the No Action alternative is my preference, but it is described as merely a deferral of the inevitable. The Preferred Alternative, 3, is the best one, in order to protect cave resources, and also to retain the forests on karstlands, which are predicted not to grow back once cut (p.3-21). In order to further protect wildlife habitat in already fragmented areas, units 270, 286, 259, and 257 in UCU 529 should be omitted from the unit pool. Retaining these units as forest will also help to protect subsistence hunting areas and habitats for residents of Port Protection and Point Baker

KH-3

In addition to the timber supplied to KPC under the Long-Term Sale Contract, the Forest Service also provides timber for small business owners involved in the value-added industry through independent timber sales. The Lab Bay Project is located entirely within the Primary Sale Area for the Long-Term Contract; therefore, consideration was not given to independent sales for this project. If KPC rejects an offering within this area, the offering may be made available to the independent sale program.

KH-4

Based on the Draft EIS, the implementation of Alternative 2 would provide approximately 6 job-years per MMBF. This equates to approximately 7 acres of timber per job-year.

The cruiseship route is one of many visual priority travel routes and use areas considered in analysis of the alternatives. Several of these locations are suitable for natural resource-based recreation.

KH-5

Your comment regarding specific units in the vicinity of Port Protection and Point Baker was considered and is reflected in Alternative 6 of the Final EIS.



## Responses to Karen Howell

- KH-6** Your comment was considered along with others, and is reflected under Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road.
- KH-7** Your comment favoring selective harvest over clearcutting is noted. The Final EIS proposes to implement nine different silvicultural systems, five of which are considered alternative methods to clearcutting. Depending on the alternative, 18 to 23 percent of all acres proposed for harvest will use silvicultural systems other than clearcutting, with up to 17 units proposed for group/single tree selection harvest (Alternative 2).
- KH-8** Your ideas regarding the Desired Future Condition of the Tongass National Forest are appreciated and noted.

The Calder Tie Road must not be built. All the action alternatives express a concern that there may not be sufficient populations of deer to support both subsistence and non-subsistence hunting because of further habitat degradation due to logging. The Calder Tie Road would further increase pressure on deer populations because of easier road access.

**KH-6**

Projections for the future of the Tongass are in themselves questionable. No one knows how soon, or whether, the forest, or pulp crop, will regenerate, or how many times it can be cut before the soil is exhausted. The forest has reached its present state of magnificence with nothing having been removed. The biomass has been repeatedly recycled. Removing some trees from the forest is much more likely to be sustainable than is removing the forest from the landscape. There is a hill near Port Protection that has been selectively hand-logged, in a casual, unmanaged way, for house pilings, cabin logs, trolling poles, etc., for 80 years or so. It appears to be an area of healthy and vigorous mixed-age forest with abundant browse, and intact undergrowth--a small-scale model of what much of the Tongass could be.

**KH-7**

The desired future condition of the Tongass includes old growth forest, conscientious selective logging, value-added industry, informed tourism, viable small communities, and healthy fish and wildlife populations. I've seen Prince of Wales Island from a fish boat, from a kayak, from the road, and on foot. Every year I meet more and more people, most of them Americans whose forest this is, who want to see what is behind that pretty fringe of trees. I would like them to find the great wilderness they came to Alaska for.

**KH-8**

Sincerely,

*Karen Howell*

Karen Howell

cc. Gretchen Goldstein, Port Protection  
Niel Lawrence, Natural Resources Defense Council

## Responses to Lance Howell

<p><b>LH-1</b></p>	<p>7202 South Pass Road Sumas, WA 98295 September 13, 1995</p>	<p>Your comment regarding specific units in the vicinity of Port Protection and Point Baker was considered and is reflected in Alternative 6 of the Final EIS.</p>
<p><b>LH-2</b></p>	<p>Forest Supervisor Ketchikan Area Tongass National Forest Attn: Lab Bay EIS Federal Building Ketchikan, AK 99901</p>	<p>A Project-designated contiguous old growth block is proposed in the Port Protection/Point Baker area under alternatives 4 and 6 in the Final EIS. The Conservation Strategies portion of the Wildlife section in Chapter 3 provides a description, table, and map regarding this Project-designated old block growth. In addition, alternatives 4 and 6 excludes harvest from a large block of land in this Point Baker-Port Protection area due to high vulnerability karst.</p>
<p><b>LH-3</b></p>	<p>Of all of the considered options in the "Lab" Bay project area draft EIS Alternative 3 is the preferred alternative. After being away from Port Protection during much of the operation of the logging camp in Labouchere Bay it is shocking to see how much timber was cut in just a few short years. When I think about it, I am amazed at how our generation has the arrogance to consume so much, so fast, confident that future generations will applaud our gluttony. In accordance with present political constraints I support Alternative 3 with these reservations. In VCU 529 units #270, 286, 259, and 257 should be dropped. For years, people of Point Baker and Port Protection have been working for forest preservation. For years, there has been heavy cutting in the area. More than half of the high volume old growth has been taken. Dropping these cuts would protect the winter range of the deer that are so important to area residents. The already fragmented forest should remain a forest. A habitat conservation area should be established in the Port Protection and Point Baker area. The Calder tie road should not be built, and roads should be closed after forest removal.</p>	<p>Your comment was considered along with others and is reflected in the Final EIS under Alternative 6, which does not propose construction of the Calder Tie Road.</p> <p>With the exception of 2.5 miles, all newly constructed roads are proposed for closure under Alternative 6. In addition, about 54 miles of existing roads are proposed for closure under the action alternatives. Please refer to the Chapter 2 table "Comparison of Environmental Consequences by Alternative".</p>
<p><b>LH-4</b></p>	<p>There are questions regarding, "The Desired Future Condition" of the forest. It is stated that all available old growth will be logged and that the forest will be replaced by young vigorous second growth to be logged again in 100 years. It is not clear why this is to be desired. I first came to The Tongass in 1973 when there was still 30 years to go on the KPC contract. I remember being told then that, not to worry, the forest will grow back in 50 years and will again be available for harvest. In fact, there is some remnant belief in this fantasy. I was recently assured as much by an employee of KPC. Now, after almost 50 years of large scale logging, the question arises, "Why don't you go back and cut those areas you cut 50 years ago?" The answer now is: after 100 years the forest will again be available for harvest. Is that true in the Mountain Hemlock zone? Is it true on the eroded areas of Flicker Ridge and</p>	<p>The desired future condition is a description of the goal that has been established through the forest planning process for a particular area of land. Management actions are conducted across the Forest in an effort to achieve these goals. A project EIS, such as the Lab Bay Final EIS, evaluates the proposed project activities in relation to the potential effect upon the resources and in relation to its ability to move the Forest towards the desired future condition. The Final EIS describes the desired future condition for the Lab Bay Project Area as determined in both the current Forest Plan (1979, as amended) and the TLMP Draft Revision (1991a). Questions regarding the desired future condition of areas on the Tongass National Forest should be directed to the TLMP planning team, which is evaluating alternatives in the 1996 TLMP Draft Revision.</p> <p>Regeneration harvest can be conducted on the Tongass National Forest when a stand reaches the culmination of its mean annual growth increment. The age that this occurs varies based on the productivity of the</p>



## Responses to Lance Howell

- LH-4 (Cont.)** site. Some sites may reach this point by age 80, while less productive sites may require 150 years. A 100-year rotation is used during analysis and is considered a general average for productive stands that will be actively managed.
- LH-5** The desired future condition for areas on the Tongass National Forest may change with each subsequent Forest Plan. The desired future condition is developed through public concerns and needs for timber products and other resource values. The Forest Service updates existing Forest Plans every 10 to 15 years.
- LH-6** Viability is not addressed by project area, but by ecological subprovince. Refer to response to SEACC-22. The 1996 TLMP Draft Revision addresses wildlife population viability across the Tongass National Forest.
- LH-7** Under Alternative 6 of the Final EIS, karst resources would be protected from the adverse effects of road building and harvest. Refer also to responses to AK-28, SEACC-28.
- The Lab Bay Project Area is within the primary sale area of KPC Long-Term Sale Contract. As part of this contract the timber volume in the Lab Bay Project Area will be offered to KPC for harvest. If KPC rejects an offering within this area, the offering may be made available to the independent timber sale program. Alternative forestry practices are being proposed on many units within this project. Chapter 3 of the Final EIS describes the various harvest types that are proposed, many of them significantly different than what has been used previously in the Lab Bay area. A unique plan has been developed for the harvest of timber on Thorne Island that does not require the construction of roads and will provide resource protection at a higher level than conventional harvesting practices.
- Your comment favoring alternative harvest methods over clearcutting is noted. The Final EIS proposes to implement nine different silvicultural systems, five of which are considered alternative methods to clearcutting. Alternative 2 contains 17 units proposed for group/single tree selection harvest (see Silviculture, Timber and Vegetation section of Chapter 3 of the Final EIS).

similar areas? Is it true of the low volume timber stands adjacent to muskegs? Have we seen even 50 years of growth in areas such as these? How do we know how even the best timber land will respond to a second cutting? We don't know and can't know because the time hasn't gone by yet and whatever problems will arise with a second growth industry are as yet unknown. And still, with the same assurance that we were told about a fifty year harvest, we are told that the forest will be back in 100 years.

We know more than we used to about some of the costs of this "Desired Future Condition." It is said in the EIS that logging old growth is depleting a non-renewable resource. Is the value of these big old trees, these musical-instrument-quality spruce sawlogs, these yellow cedar logs that can be used for building Japanese temples, are these what is paying for the high costs of logging in the Tongass? When these trees are all gone and we are logging second growth, will there be enough profit in the industry to continue to afford the environmentally sensitive logging practices we increasingly employ? Will the taxpayers want to continue to subsidize such an industry? Will logging low-value second growth in the Tongass be a viable option? There are huge fiber farms in areas around the world where regeneration is much faster, where the fellerbuncher, low labor costs, and lack of regulation make for much cheaper costs of production. Will there be new fiber crops, grown and harvested in agricultural areas that will make bulk fiber production in the Tongass unprofitable? Will this "Desired Future Condition" really be anything to desire? Or will the pulp mill move out, leaving biological impoverishment and economic despair?

You say that many species, including wolf and marten, will be reduced to half of present populations, and that some will be isolated in islands of remnant habitat. Will that be enough to ensure viable populations? You say that deer populations will be reduced to such an extent as not to meet the subsistence needs of the existing communities. You say that road building and logging on sensitive karst lands can do permanent damage. Are the regulations protecting salmon habitat adequate to the task? Will enforcement on the ground be thorough enough to ensure habitat protection? The EIS does much to document these problems.

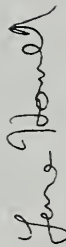
It is time to re-evaluate our direction. I mentioned in the meeting in Port Protection in late August that we need a model for a different kind of forestry, one that harvests a much lower volume, that relies on small sales, and encourages value-added production. The real value of the Tongass in the future will be, if they still exist, its wild spaces and wonders. That can't be duplicated on a hemp farm in Nebraska or a pine plantation in Alabama. Here on North Prince of Wales we have the opportunity to preserve those values and create a small, rational timber and processing industry that can help sustain prosperous communities and a rich and diverse ecosystem. So, in answer to your question of the last meeting Ann, "On which cutting units



would I suggest practicing an experimental forestry?" I answer, "All of them." I look forward to working with you to help create the conditions that will allow North Prince of Wales to become a model for sustainable forestry and community development. As is stated in the EIS, the very existence of a healthy, abundant ecosystem has a measurable value to the American public. We could add to that a human culture that preserves and protects those values while providing real products, recreation fish, wood products and more to the public.

LH-7

Respectfully,



Lance Howell



United States Forest Service  
Department of Agriculture

Alaska Region

Tongass National Forest  
Ketchikan Area  
Federal Building  
Ketchikan, AK 99901

# Responses to Elzie Isley

EI-1 Your comment supporting continued timber harvest is noted.

File Code: 1950  
Date: August 29, 1995

Dear Planning Participant:

This letter is to notify you that we are extending the comment period for the Lab Bay Draft Environmental Impact Statement from September 18, 1995 to:

SEPTEMBER 30, 1995.

Extension to the comment period will allow folks with seasonal work, such as commercial fishermen, to have more time to respond to the Draft EIS.

Thank you for your continued involvement in the Lab Bay EIS process.

Sincerely,

*Robert L. Vaught*  
ROBERT L. VAUGHT  
Acting Forest Supervisor

*use the plan that  
gives the most timber. you  
can't save every cone, bush,  
tree, and little ~~stream~~ stream.  
With only 10% of the forest  
being scheduled to be logged  
plenty will be left (90%)  
We need jobs & timber  
Thanks  
Yours truly  
Mr Elzie Isley*

Caring for the Land and Serving People

Printed on Recycled Paper  
FS-6200-180 (12/93)

24 September, 1995

Forest Supervisor Ketchikan Area,  
Tongass National Forest,  
Federal Building,  
Ketchikan, AK 99901

Dear Sirs,

Reference File Code: 1950, Lab Bay Draft Environmental Impact Statement, Ketchikan Pulp Company Long-Term Timber Sale Contract, Summary, as modified by your letter of 29 August, 1995.

DK-1

I have reviewed the reference document and I strongly recommend approval of Alternative 3, with the inclusion of the Uneven Aged Management Plan for Thorne Island instead of the Thorne Island Plan now included with Alternative 3.

DK-2

This alternative, as modified above, would provide the greatest environmental protection for the entire ecosystem. It would protect the High Vulnerability Karst areas thus providing greater support for fisheries and wildlife habitat and aid the subsistence harvest. It would reduce the road building impact on the few remaining roadless areas, particularly on Thorne Island.

DK-3

Inclusion of the Uneven Aged Management Plan for Thorne Island, in addition to protecting the roadless areas, would reduce the adverse impact on fisheries as well as improving wild life habitat. It would also reduce the possibility of damaging cultural sites, known and unknown.

While I have recommended alternative 3, as modified above, I consider Alternative 1 the best choice as it would prevent any further ecological damage in the Lab Bay Project Area. I realize that approval of Alternative 1 is unrealistic and therefore I have not included it in my recommendations.

If an alternative other than #3 is approved, I strongly recommend that the west half of unit 211 not be included because of existing caves and karst features.

My recommendations are based on my personal knowledge of the Lab Bay Project Area gained over the past eight years in the area.

Alternative 3, as modified above, is strongly recommended for approval.

Sincerely,



David M. Klinger  
P.O. Box 537,  
Leavenworth, WA 98826  
(509) 548-5480

Copy to Glacier Grotto, NSS.

## Responses to David Klinger

DK-1

Your comment has been considered and is reflected in Alternative 6 which emphasizes protection of high value karst, wildlife, subsistence, and visuals resources. Alternative 6 incorporates an uneven-aged management plan for Thorne Island.

DK-2

Every alternative proposed for the Lab Bay EIS, including the No Action alternative, will be considered by the Decision Maker for the Record of Decision.

DK-3

Your recommendation to drop the west half of unit 536-211 is noted. This unit is not included in alternatives 4 and 6 which emphasize the protection of high value karst resources.



## Responses to Joan Kautzer

JK-1

The Forest Plan designates much of the land in the Lab Bay Project Area for moderate to intensive management for timber. Further, the Project Area is part of the Primary Sale Area for the KPC Long Term Sale Contract. See Appendix A for additional information regarding the scheduling of harvest in the Lab Bay area.

JK-2

As required by NEPA, the Lab Bay EIS analyzes the significant effects likely to occur as a result of the proposed action of harvesting approximately 85 MMBF. In addition to disclosing the specific direct, indirect, and cumulative effects of the proposed action on the biological resource (among others), the Lab Bay Final EIS proposes mitigation and monitoring measures serving to minimize or avoid adverse effects. The action alternatives described in the Final EIS range between 40 and 102 MMBF. Implementation of any one of these alternatives will not lead to "total biological collapse" as stated in your letter.

JK-3

Sections 802 and 804 of ANILCA provide for nonwasteful subsistence uses to have priority over all other taking of fish and wildlife, on federal lands where such taking is allowed. That is, when the taking of such resources must be restricted in order to protect the continued viability of biological populations or to continue subsistence uses, subsistence uses have priority over all other consumptive uses of these resources. Section 810 of ANILCA provides for an extensive review of any action on federal lands which may adversely affect subsistence uses, but allows such actions to take place if (1) proper notice is given to State agencies, local communities, and other pertinent bodies; (2) hearings in the vicinity of the area involved are conducted; and (3) it is determined that such an action is necessary, consistent with sound management principles for the utilization of public lands, will involve the minimal amount of public lands necessary to accomplish the proposed action, and reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from the proposed action. The proposed action, while potentially adversely affecting subsistence uses, does not eliminate all opportunities for subsistence, although it may require some users to hunt in different areas, increase their effort, and make other adjustments, as well as changing their experience of the hunt and their overall perception of their quality of life. The threshold between "alteration and adaptation" and "elimination" can differ for individual subsistence users. These issues are analyzed in the EIS.

IN RESPONSE TO THE KPC LONG-TERM TIMBER SALE CONTRACT LAB BAY PROJECT AREA DEITS, THE PLAN SHOULD BE WITHDRAWN BECAUSE THE PROJECT AREA HAS BEEN TOO HEAVILY LOGGED

IN TTRA ~~THE~~ IT SAYS "TO THE EXTENT CONSISTENT WITH PROVIDING FOR THE MULTIPLE USE AND YIELD OF ALL RENEWABLE FOREST RESOURCES, SEEK TO PROVIDE A SUPPLY OF TIMBER..." IT DOES NOT SAY "PROVIDE A SUPPLY OF TIMBER AND TO HEZL WITH MULTIPLE USE" WHICH THE PREMISE OF YANKING <sup>85</sup> MIL BF OUT OF THE SALE AREA IMPLIES. THIS AREA CAN NOT SUPPLY <sup>85</sup> MMBF MORE OF OLD GROWTH TIMBER WITHOUT THE TOTAL BIOLOGICAL COLLAPSE OF THE FISH AND WILD LIFE RESOURCES.

SEC 810 OF ANILCA PROVIDES FOR SUBSISTANCE USE TO TAKE PRIORITY OVER ALL OTHER FOREST USES. ON PAGE 5 OF THE SUMMARY PARAGRAPH S LISTS ROADING AND HABITAT FRAGMENTATION AS DETRIMENTAL, SAYING THOSE FACTORS "COULD REDUCE THE HABITAT CAPABILITY OF THE PROJECT AREA AND

JK-3

~~BECAUSE THE HABITAT CAPABILITY OF THE PROJECT AREA WOULD BE REDUCED~~ COULD DISPERSE THE ANIMALS FROM TRADITIONALLY USED AREAS, ALTERING SUBSISTENCE OPPORTUNITIES" MAY I SUGGEST INSTEAD OF USING THE VERB 'ALTERING' THE AGENCY SHOULD SUBSTITUTE 'ELIMINATING' THESE FACTORS ELIMINATE SUBSISTENCE OPPORTUNITIES. THIS IN UNACCEPTABLE

JK-4

IT HAS BEEN THE LONG STANDING REQUEST OF RESIDENTS OF POINT BAKER AND PORT PROTECTION THAT THERE BE NO MORE LOGGING NORTH AND WEST

## Responses to Joan Kautzer

JK-4 Your comment was considered along with others and is reflected in Alternative 6 of the Final EIS. Alternative 6 defers harvest on all units located north of the 20 Road between Protection Head and Shine Creek. The Community Resolution of 10/92 has been added to the Lab Bay Planning Record.

JK-5 Your comment was considered along with others and is reflected in Alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road. The Draft EIS contained an incorrect figure for the cost of the proposed road; the Final EIS shows the correct cost at 128 thousand dollars.

(2)  
THE 20 ROAD FROM SHINE CREEK TO PROTECTION HEAD. WE HAVE BEEN ASKING FOR THAT FOR YEARS AND YEARS. (PLEASE ADD THE POINT BAY COMMUNITY RESOLUTION FROM 3 OR 4 YEARS AGO AS TO BE INCLUDED IN THE RECORD OF COMMENTS - THE UNITS IN UCU 527 AND 529 CLEARLY HAVE IGNORED THIS VERY SIMPLE BASIC REQUEST. WHY IS A TIE ROAD BETWEEN CALDER BAY AND LAB BAY EVEN UNDER CONSIDERATION? IN 1990 THE FOREST SERVICE MADE A COMPROMISE BETWEEN LPK AND LOCAL OPPOSITION TO THE ROAD TO PUT A FLOATING CAMP IN CALDER BAY AND TO DROP ALL FUTURE CONSIDERATION OF THIS LINK ROAD. IT IS A SLAP IN THE FACE TO ALL WHO DEALT IN GOOD FAITH TO RENEGE A SKIMPY 5 YEARS LATER UNDER NO CIRCUMSTANCES SHOULD THIS TIE ROAD BE CONSTRUCTED. ROADING THIS SENSITIVE AREA WOULD BE DETRIMENTAL TO THE ALREADY STRESSED POPULATIONS OF WILDLIFE IN THE PROJECT AREA AND THE SUBSISTANCE USERS. THE ECONOMIC EXPENSE OF BUILDING THIS ROAD (SOMETHING LIKE A MILLION DOLLARS A MILE!) CAN NOT BE JUSTIFIED WHEN PEOPLE ON MEDICARE AND FOOD STAMPS ARE BEING TOLD TO TIGHTEN THEIR BELTS.

ANOTHER POINT OF CONCERN I HAVE IS IN THE SUMMARY PAGE 2 PARAGRAPH 3 STATES "APPROXIMATELY 8 MILES OF EXISTING ROAD WOULD BE RECONSTRUCTED..." THE FOREST SERVICE ~~BEFORE~~ HAS A SYSTEM OF DEDUCTING THE INITIAL EXPENSE OF THEIR ROADS BY



## Responses to Joan Kautzer

JK-6

The logging engineers identified approximately 8 miles of existing road that needed some level of reconstruction in order to be safely used for hauling for the proposed harvest. These segments of road are scattered over several different locations and have not received traffic use in many years. Some of these segments were previously closed by the removal of culverts or bridges. Reconstruction is required to provide proper road drainage and surfacing, vegetation clearing, and design standards for safe vehicle traffic. Your questions regarding cost accounting for existing roads are outside the scope of this EIS.

SPREADING IT OUT OVER THE LIFE OF THE ROAD. IT SEEMS TO ME THAT IN <sup>CONSTRUCTION</sup> OF TONGASS ROADS, ~~THE~~ EXPENSES ARE SPREAD OVER 100 TO 150 YEARS. WHY ARE 8 MILES OF PRE-EXISTING ROADS NEEDING TO BE RECONSTRUCTED? AND HOW MANY YEARS WERE THE INITIAL EXPENSE OF THE ROADS NEEDING RECONSTRUCTION SPREAD OUT OVER? CHANCES ARE HIGH THAT THESE ROADS ARE LESS THAN 15 YEARS OLD AND ARE ALREADY MARGINAL. IT IS 'SAFE' TO ASSUME, IN VIEW OF RECENT RECORD LAND SLIDES WITHIN THE LAST 4 YEARS, THAT ROADS ON PRINCE OF WALES HAVE A SHORT LIFE SPAN. FOREST SERVICE ACCOUNTING SHOULD BE ADJUSTED TO REFLECT THE TEMPORARY NATURE OF THE ROADS. ECONOMIC FEASIBILITY FOR US TAXPAYER TO CONSTRUCT THESE DISPOSABLE ROADS, IS NON-EXISTANT.

JK-6

ISSUE 7 OF THE SUMMARY: EFFECTS OF TIMBER CUTTING AND ROADING ON LOCAL COMMUNITIES AND RESIDENTS, DOES NOT STATE THAT POINT BAKER AND PORT PROTECTION WERE IN EXISTENCE LONG BEFORE ANY ROADS ON THE NORTH END OF THE ISLAND. IT FAILS TO ALSO MENTION, WITH THE HUNDREDS AND HUNDREDS OF MILES OF ROADS IN THE SALE AREA ALONE, THAT THE QUALITY OF LIFE IN THESE REMOTE VILLAGES HAS ERODED AS A DIRECT CONSEQUENCE. NO LONGER CAN WE LOOK AT CALDER AND SEE A MAGNIFICENT VIEW. NOW ALL WE HAVE IS A HACKED UP USED-TO-BE.

JK-7



## Responses to Joan Kautzer

The EIS and Subsistence Resource Report analyze the effects of the proposed harvest and road building on wildlife and subsistence resources, and on the affected subsistence communities, including Port Protection and Point Baker. The concerns you note have been considered in the analysis, and the potential effects are displayed. When possible, mitigation, such as road closures to reduce vehicular access, are proposed. Alternative 6 of the Final EIS defers harvest on all units located north of the 20 Road between Shine Creek and Protection Head.

The Forest Service is unaware of the incident mentioned in your comment. Immediate notification of ADF&G or the Forest Service is the most effective recourse in such cases.

JK-7

(4) LANDSCAPE. RED BAY, A PLACE WITH ALMOST SACRED SIGNIFICANCE AND BEAUTY, HAS BEEN SHAVED AND DESECRATED. THE DRAINAGES BEHIND POINT BAKER HAVE BEEN CARVED TO BLEEDING CARNAGE, HILLSIDES FESTERING WITH STUMPS AND SLASH. BASICALLY, THE FOREST SERVICE HAS STOLEN OUR HOME AWAY. ROOFS & GONE, WALLS ARE GONE, FLOORS GONE, NOW THIS GOES TO 85 MBF, PLAN HAS COME TO TAKE THE FOUNDATION PILING'S. WITH THE TAKING OF THE FOREST, THE DEER RESOURCE HAS BEEN COMPROMISED DRAMATICALLY ON TWO FRONTS. THE FIRST, IS QUITE SIMPLY, THE ELIMINATION OF HABITAT. THE SECOND IS THE INTRODUCTION OF THE NON-SUBSISTANCE ROAD HUNTER. BOTH HAVE TAKEN, AND WILL CONTINUE TO TAKE, A SUBSTANTIAL PART OF THE RESOURCE. ~~FOR SUBSISTENCE USE~~

JK-8

EVEN THE FISHERIES RESOURCE HAS SUFFERED AT THE INTRODUCTION OF THE ROADS. THIS SUMMER SOME NON-LOCAL DROVE TO A SOCKEYE CREEK IN RED BAY, DYNAMITED IT, AND LEFT NUMEROUS FISH SMASHED ON THE BANKS. PEOPLE WHO ACTUALLY LIVE IN AN AREA, PLACE FAR GREATER RESPECT AND SIGNIFICANCE ON WILDLIFE RESOURCES THAN PEOPLE WHO DRIVE IN FROM SOMEWHERE ELSE.

JK-8

THE UNITS WITHIN ALTERNATIVE 3 ARE IN SENSITIVE AREAS. N. POW IS A HEAVILY KARSTED AREA. UNITS ON HIGH SLOPES, AND HIGH RISK SOILS WILL SLIDE, AND MAY NOT REGENERATE. P&B UNITS WITHIN THE PLANNING AREA ARE

JK-9

## Responses to Joan Kautzer

- JK-9** Units and roads proposed in alternatives 3 and 6 are not located on high vulnerability karst. Refer also to response to TCP-7.
- JK-10** There are no salvage sales currently proposed in the Project Area. Depending on the type of salvage logging being conducted the sales are generally limited to harvesting dead, dying, and down logs, with the option of removing live standing timber only where it interferes with the safe operation of the logging crews. If and when salvage sales are conducted in the Lab Bay Project Area, they are subject to the same domestic processing requirements and export restrictions as all other timber sales in the area.
- JK-11** The road in VCU's 534 and 534.1 is for the purpose of accessing National Forest System Lands. Portions of this road and many of the units that it accesses have been removed from Alternative 6 of the Final EIS. While the Forest Service is not required to construct roads for access to mining claims, it is required to allow reasonable access across roads constructed for other purposes, such as logging.
- JK-12** Your comment opposing timber harvest in the Lab Bay Project Area for at least 150 years is noted.

**JK-9** (5) NOT RESEEDING BECAUSE OF THE LIMESTONE KARST COMPONENTS. CHANGE OF DRAINAGE BECAUSE OF ROADING & CUTTING WILL ALSO NEGATIVELY IMPACT CAVE RESOURCES. BLASTING FOR NEW ROAD CONSTRUCTION DAMAGES DELICATE CAVE FORMATIONS SUCH AS SODA STRAWS... THIS PLAN COULD NEGATIVELY IMPACT CAVE AND KARST RESOURCES IN THE PROJECT BOUNDARIES.

**JK-10** ANOTHER AREA OF CONCERN IS THAT IF LAB BAY IS RE-OPENED THERE WILL BE A MARKED INCREASE IN SALVAGE SALE UNITS HARVESTED IN THE PROJECT AREA (WHICH COINCIDENTALLY IS MY HOME) I OPPOSE ANY FURTHER SALVAGE SALES IN THE VCU'S AROUND POINT BAKER AND FOR PROTECTION ON GROUNDS THAT IT IS AN UNETHICAL WAY TO PROMOTE ROUND LOG EXPORT FROM OUR NATIONAL FOREST. SALVAGE SALES QUITE OFTEN DOMINATE THE BLOW DOWN PHENOMENON AND ARE DETRIMENTAL TO MAINTAINING WILDLIFE HABITAT.

**JK-11** ON A FINAL NOTE, IT IS WRONG TO SUBSIDIZE A ROAD TO A PRIVATE CORPORATE HOLDING (i.e. CALIFORNIA BEACH, LPK) USING TAX PAYER DOLLARS. ~~THE~~ VCU'S 534 & 534.1 ~~HAVE~~ HAVE A ROAD RUNNING ~~THAT~~ DIRECTLY TO PRIVATE LAND HOLDINGS THROUGH A VERY IMPORTANT SUBSTANCE DEER HUNTING AREA. THIS IS NOT A GOOD IDEA.

**JK-12** IN CONCLUSION THERE SHOULD BE NO MORE TIMBER CUTTING IN THE LAB BAY AREA FOR AT LEAST 150 YRS.  
Joan Kautzer

Box 1331  
Betersburg, Ak. 99833  
Sept. 8, 1995

## Responses to Rebecca Knight

RK-1

Your comment noting the important contribution of Lab Bay Project Area streams to commercial fishing is noted. Both 1994 and 1995 were extremely low water years for Southeast Alaska; thus, the condition of Project Area streams in early September of 1995 may not be representative of typical conditions.

Forest Supervisor

Ketchikan Area

Tongass Nat. Forest

Attn: Lab Bay EIS

Federal Bldg.

Ketchikan, Ak. 99901

Dear Ms. McK.

Following are my comment on the LAB Bay Draft Environmental Impact Statement.

As a 20 year resident of S.E. Alaska, wife, mother of two young sons, and a S.E. Alaska United Entry Salmon Draft Gillnet Permit holder, I have a significant interest in this project. For the last five years I have fished almost exclusively along the north shore of P.O.W. Island. The salmon streams along this shore are vitally important to my family and our livelihood. Red Bay, Salmon Bay, Foster Bay and Humpy Creek fish stocks have or are contributing to my income this summer. Red Bay ~~area~~ has been devastated beyond what should have ever occurred in mine or my grandchildren's lifetime. In 20 years, the timber industry has

RK-1



## Responses to Rebecca Knight

- RK-2** Refer to response to SEACC-28.
- RK-3** Your opposition to harvest in VCU's 532, 534, 530, and 529 is noted. The effects of timber harvest on fish habitat and water quality was a significant issue in development of the alternatives. Best management practices have been prescribed for each harvest unit in order to minimize adverse effects on adjacent stream channels. The potential effects of proposed harvest units on water quality and quantity is described in the Water Resources section of the EIS. Please also refer to responses to SEACC-28 and DOI-12 for a description of the mitigation measures implemented during preliminary harvest unit layout.
- RK-4** The document referenced became available after the Lab Bay Draft EIS was sent to the publisher.
- RK-5** While areas of EVC 6 (excessive alteration) do occur, overall Cumulative Visual Disturbance (CVD) is consistent with TLMP (1979, as amended) and TLMP Draft Revision (1991a) guidelines.

**RK-1** destroyed the fish runs there. A friend of mine who works for ADFA commercial fisheries division was doing their annual stream walking there the other day, and said there was no water left in many of the pools along the creek. (Spawning + rearing pools)

I attribute this condition to the overcutting that has occurred in the Red Bay watershed. You cannot convince me otherwise. If the watershed had been left relatively intact, the streams around Red Bay would be flowing and cool. Although I write this between fish openings, and have not had a chance to thoroughly review the document I encourage you to fully adopt the Anadromous Habitat Fisheries Assessment recently completed by the PNW station + disclose this information to the public.

**RK-3** I also oppose any more cutting or roading in VCU's 532.0, 534.0, 530.0, 529.0. These watersheds have been impacted too much already.

Also please incorporate the "Summary and Analysis of Road Maintenance Best Management Practices on the Tongass National Forest," prepared for the Office of the Governor CUB and DGC, June 30, 1995, into your analysis.

Sincerely,  
Rebecca Knight

**RK-5** PS [Visible Impacts on the PNW north shore have been far in excess of what any rational thinking would have allowed.]

## Responses to Connie LaPerriere

Sept. 19, 1995

Forest Supervisor  
Ketchikan Area  
Tongass National Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan AK 99901

CL-1

Your comment has been considered and is reflected in Alternative 6 of the Final EIS which emphasizes protection of high value karst, wildlife, subsistence, and visual resources. Alternative 6 incorporates an un-even-aged management plan for Thorne Island.

CL-2

Alternatives 3 and 6 emphasize protection of karst resources, and implement the draft standards and guidelines for karst.  
Refer also to response to AK-8.

I am writing to express my view on the Lab Bay EIS.  
My initial preference is for alternative one, I believe that the Lab Bay area has already had a significant amount of harvesting take place.

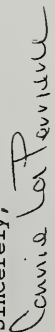
However, I understand that the USFS has a contract with the Ketchikan Pulp Company. If an alternative for harvesting is chosen, I would state my preference for alternative three. I believe that alternative three will protect karst geology and habitat, with the exception of Thorne Island. Fifteen point five miles of road in such a small area is certain to have an adverse effect on wildlife. I question whether the timber harvested on Thorne Island will be worth what it cost to build the roads, and what damage would be done to habitat on the island.

The Lab Bay area contains a great amount of Karsted land. The effects of logging and regeneration on Karst has been shown by units that have been cut in the past. The regeneration of trees in these areas is very poor. It is not in the best interest of anyone to harvest areas that will not regenerate in the one hundred to one hundred and fifty year rotation target. At the time some of these Karsted areas were logged it was not known how the features of karst and the hydrology effected the forest. Now that those effects can be observed first hand and with the knowledge that has been brought to light from other areas of karst that has been harvested in similar areas around the world, it would be negligent to ignore that knowledge and harvest, knowing the effects.

Karst and caves are very special to me and to many people around the world. The amount of knowledge that is currently being brought to light in the fields of archaeology, anthropology, geology, entomology, and hydrology, should not be destroyed by allowing harvesting to take place that would have detrimental effects on the caves.

I would like to express my appreciation of the work the Forest Service has done to assess these features. The decisions that must be made are not easy considering all the issues that need to be addressed. I know that people are dependent upon the harvesting of trees in the Tongass, but it is my hope that decisions will be based upon science, and the knowledge that this must be a renewable resource. Not a resource that will bring profit to one generation to the detriment of the next.

Sincerely,



Connie LaPerriere  
P.O. Box 9062  
Ketchikan AK 99901

CL-1

CL-2

## Responses to David Love

DL-1	Your comment in support of the No Action Alternative is noted.
DL-2	Your comment regarding the cancellation of the Long-Term Sale Contract is noted, however this is outside the scope of this EIS.
DL-3	Refer to responses to KH-3 and LH-7.
DL-4	Alternatives 3 and 6 of the Final EIS defer harvest on high vulnerability karst. Refer also to responses to TCP-7 and AK-8.

RECEIVED  
FOREST SUPERVISORS OFFICE  
SEP 13 1995  
TONGASS NF  
KETCHIKAN, AK 99701

Attn: Robert Vaught  
Tongass National Forest  
Ketchikan Area  
Federal Building  
Ketchikan, AK 99901

To Whom it may Concern (Dale, Anne Archie, Robert Vaught),

DL-1 [ Briefly, I would like to comment on the Lab Bay EIS: My preferred alternative still remains "no additional harvest" due to the extensive losses of this unique biome. Temperate rainforest coupled with the underlying carbonate rock make this ecosystem fairly unique in the world. I do not think that the long term contract with KPC allows for scientific, conservative timber management and wise use. Ideally, the contract should be canceled. As a voting, taxpaying, part-owner of the Tongass, I believe in conservative harvest levels of an essentially finite resource. How can we realistically forecast regeneration rates when we have little or no understanding of effects by parasites, microclimate change, erosion, hydrological change, soil loss, etc. We must be careful not to lose all the parts in case we need to rebuild. From a woodworkers and aesthetic standpoint, it's obscene to grind old growth into pulp. I realize we all use wood products in some way, maybe the Forest Service should consider publishing a pamphlet on ways that people can conserve and recycle the wood products we all use. Also, I would rather see more small contracts to small mills let, generating money by "value added" processing and milling, and keeping more of that resource money within the area.

DL-3 [ My second management choice is, of course, the preferred alternative #3. I was appalled to discover that the karst resource was put at risk by including it in the timber base. Old growth over carbonate rock is a finite resource, impacts on one will affect the other. I think the Forest Service may be asking for trouble if logging occurs in areas overlying known karst resources. This would represent a direct violation of the letter and intent of the National Cave Resources



Protection Act. I have seen some of these caves and wonder myself how long-term management will be accomplished. Much more study is required, especially of entrance buffers which, in some cases, do not seem large enough and vulnerable to windthrow. Finally, the diverse scientific values of these caves alone should warrant preservation, not to mention the recreational and aesthetic values. I hope that the Forest Service decides to use the Tongass, a public resource, wisely. Wise use in some cases may mean preservation.

Sincerely,

David Love  
PO Box 210745  
Auke Bay, AK 99821

## Responses to Marcel LaPerriere

August 11, 1995

Forest Supervisor, Ketchikan Area  
Tongass National Forest  
Attn: Lab Bay EIS  
Federal Building  
Ketchikan, AK 99901

Dear Sir,

As land owners in Whale Pass, and a long time resident of Southeast Alaska, we are concerned about any further harvesting of timber from the Lab Bay area. My wife and I would hope that the Forest Service would make the responsible decision and choose alternative 1. No further harvest.

We understand the political pressures that the USDA/USFS is under to continue the over harvesting of Prince of Wales. It is our hope that the EIS team will ignore this pressure and make a decision based on good science.

All the communities within the Lab Bay area depend on strong wildlife populations for subsistence. Any more harvesting within this area will have a negative impact on wildlife. One or two hard winters could already decimate deer populations, without the added burden of more harvesting.

Any harvesting on Thorne Island would not be responsible. Harvesting on Thorne Island would be akin to raping a nearly pristine island. It seems whoever chose Thorne Island as a possible location saw a nearly virgin forest and was immediately compelled to destroy it's integrity. Aren't we going to leave anything untouched for our children? Thorne Island is the only area of it's size that hasn't already seen the handy work of timber extractors.

Choosing any alternatives other than 1 will increase the federal deficit even further. Corporate welfare should not be tolerated, not even in our own back yards. I don't support subsidizing tobacco growers, pork farmers or timber giants.

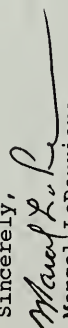
The accumulative effects, on the visual impacts haven't been considered fully. If they had, then no further harvesting would be considered. Currently, about the only place a person can go within the Lab Bay area and not see a clear cut is into one of the numerous caves.

Speaking of caves. My wife and I have personally visited many caves within the Lab Bay area. Past timber extraction and road building has severely impacted many caves. Enough is enough. By law the federal government is obligated to protect caves under the 1988 Cave Resources Protection Act. Almost, any further harvesting within the Lab Bay area will have a negative impact on the caves, and karst.

As responsible representatives of all Americans I believe it is your responsibility to select alternative 1. Please remember that all Americans own the Tongass, not just a select few, that would profit from extracting it's resources. I believe most Americans would not want any more timber extraction from the Lab Bay area.

Thank you for considering my views.

Sincerely,

  
Marcel LaPerriere  
P.O. Box 9062  
Ketchikan, AK 99901

- ML-1** Your comment in support of the No Action Alternative is noted.
- ML-2** The EIS Team's analysis and recommendations regarding the Lab Bay Project continue to be based on sound scientific data and unbiased information.
- ML-3** The effects on wildlife populations and subsistence use are addressed in the wildlife and subsistence sections of the EIS.
- ML-4** Your comment was considered along with others and is reflected in the Final EIS under Alternative 6, which would harvest Thorne Island timber using helicopters under an uneven-aged management scenario. The decision maker can choose to exclude Thorne Island from harvest.
- ML-5** The updated economic analysis for the action alternatives is presented in the Socio-Economic section in Chapter 3 of the Final EIS.
- ML-6** Refer to response to RK-5.
- ML-7** The Forest Service has designed two action alternatives, 3 and 6, which incorporate the draft standards and guidelines for protection of karst resources. Implementation of either of these action alternatives, or the No Action Alternative, will result in protection of karst and cave resources, in compliance with FCRPA. Refer to responses to AK-8 and TCP-7.
- ML-8** Your preference for the selection of Alternative 1 has been noted.

Responses to Lucille Merrill

- LM-1 Your comment opposing further harvest on Prince of Wales Island is noted.
- LM-2 Your comment opposing all harvest over karst is noted. Please also refer to responses to ML-7, AK-8, and TCP-7.
- LM-3 Cumulative effects of past and proposed harvest are analyzed by resource in the EIS. A road access management plan has been developed for the Project Area, and would result in closure of most roads constructed for the sale and over 50 miles of existing road.

LAB BAY EIS  
PLANNING RECORD  
REC'D: 02/11/95  
FOLDER: 02/11/95  
Wrangell, Alaska  
Sept. 23, 1995

Robert L. Vaught  
Acting Forest Supervisor  
Tongass National Forest

Dear Mr. Vaught and the E.I.S. Team,

I would like to comment on the Lab Bay E.I.S.

I don't believe any of the logging tracts proposed should be allowed. Since Prince of Wales Island has already been over logged, any further timber harvest would certainly be a detriment to future tourist related businesses. Eco-tourism is recognized as the wave of the future. Logging is not compatible with that.

LM-1

When the extensive Karst systems were discovered on Prince of Wales all logging should have stopped on Northern P.O.W. Those caves and karsts are so unique geologically and archialogically that all your efforts should have switched to protecting them until they are fully and scientifically explored.

LM-2

I realize you believe the karsts are not involved in each of the timber sales, but my worry is for the long-term cumulative effects of all those timber sales. The wildlife is going to suffer from too much road access.

LM-3

Sincerely yours,

Lucille M. Merrill

Lucille M. Merrill  
Box 702  
Wrangell, Ak. 99929



## Responses to Richard Myren

### RM-1

Your concern regarding the effects of timber harvest on streamflow is noted. As you know, Bartos (1989) found a significant increase in summer low flows in Stanley Creek following timber harvest on approximately 35% of the watershed. The increased summer low flow is attributed to decreased evapotranspiration. Similarly, Hicks et al. (1991) found an increase in August water yield that lasted for a period 8 years in a completely clearcut watershed in western Oregon. This increase was then followed by a decrease in predicted water yield that has continued for a period of 18 years. In an adjacent watershed that was 25% patch-cut, Hicks et al. (1991) found an increase in August water yield that lasted for 16 years, followed by a return to predicted (no change from the control) August water yields that has lasted for 10 years. The difference in response was attributed to differences in riparian vegetation caused by differing valley geomorphologies between the two watersheds. A relatively wide valley floor in the completely clearcut watershed allowed development of hardwoods in the riparian zone, but the narrow valley floor in the patch-cut watershed allowed for only limited development of hardwood stands. This study points out the importance of assessing not only the amount of a watershed that has been harvested, but the changes in vegetation following harvest that will affect the longer term response of streamflow.

For the Lab Bay project, riparian vegetation along all Class I and Class II streams will be protected by a no-harvest buffer of at least 100 feet in width. In wider, alluvial valley bottoms, this buffer has been extended to distances greater than 100 feet in order to protect side channels and wet soils. Furthermore, as described under "Cumulative Effects" in the Water Resources section of the Draft EIS, the amount of each watershed proposed for harvest is much less than has occurred in Stanley Creek or in the watersheds studied by Hicks et al. (1991). The discussion of possible long term effects on streamflow in the Draft EIS was rather brief because the proposed alternatives involve harvest of less than 10 percent of most watersheds. This discussion has been expanded in the Final EIS to better make the point that no significant adverse effects on water yield are expected.

As far as your concerns regarding Big Creek and Calder Creek, Alternative 6 does not include any harvest or road construction within those watersheds.

Dave Arrasmith Planning Staff Officer  
Ketchikan Adm. Area  
Federal Building  
Ketchikan AK 99901

### RE: Response to Draft lab bay EIS

Dear David:

I agreed, as you know following our meeting on the Polk Inlet appeal, to drop any further contest of the Polk Inlet timber sale partly because of the heated contention between the two sides over how the forest should be used and more contention would hurt rather than help better forest management, I thought. However, as you may know the Polk Inlet submission included a previously unknown document of Dan Bishop, a former Forest Service hydrologist, suggesting a long term decrease in baseflow due to second growth forest regeneration may occur. He modeled a 122 day period from June through September in which an additional 2 area inches of water was removed by fast growing forest regeneration from the Gunnuk Creek watershed over the long term (See, The effect of logging in Gunnuk Creek watershed upon water yield. Prepared by ENVIRONAID for the Sealaska Corporation by D. Bishop, January 27, 1987. 18 pages.). I find that the Lab draft EIS bothers little with these considerations (see pages 3-43 through 3-45). The comment of possible long term low flow effects is almost perfunctory (page 3-56) and the subject deserves much more respect and analysis. I will remind you that such an increase in evapotranspiration occurring on Stanley Creek as baseflows of 22 cfs would remove all of the water. That is the conversion to area inches, i.e., flow \* time/area

$$22 \text{ cfs} * (1.49 * 10^8) / (2.07 * 10^{11}) = 0.016 \text{ area-in/day}$$

is the same as  $2"/122 \text{ (days)} = 0.016 \text{ area-in/day}$  employed in the Bishop model.

Baseflows of 22 cfs which show fish habitat is being limited and the possibility of fish mortality may increase were reported during the summer on Stanley Creek in 1965, 1968, 1990, 1993 and 1994 all periods prior or following to the short term baseflow increases reported due to logging reported by Bartos (1989). A frequency of 5 events of 22 cfs or less in 12 possible years or more than one third of the years when streamflow increases due to logging were not possible due to short-term streamflow increase from logging threatens that drastic adverse effects upon stream rearing and spawning fish populations are entirely possible.

### RM-1

Indeed, an approaching train crash may well be in store for many major fish producing watersheds of southeast Alaska in which logging has been conducted. Murphy (1985) has reported a relative high frequency of drought conditions even in a rain forest such as occurring within even southeast Alaska forests.

RM-1

I am not a professional hydrologist, but I would like to know what the hell is wrong with forest hydrologists? I have since made up my mind and it is not going to be reported here.

These concerns of Bishop were furthered amplified when it was found that diurnal variation of baseflow occurred and a relatively high rate of evapotranspiration occurred in the day period. For Stanley Creek it may be likely due to the fast growing regeneration of 30 years following logging.

The relations between the diurnal variation of baseflow drainage due to gravity flow and evapotranspiration were discovered when the hourly data from the Stanley Creek stream gage readings converted to stream flow were plotted for June 4-6, 1993 (Figure 1, attached) with the following conventions that nights and days were defined as 12 hour periods beginning at 6 pm and 6 am respectively and that the periods were displaced by nine hours. The resulting graphs of streamflow would show therefore the effect of the night stream flow drainage with each appearing at 3 am the following day and the day streamflow effect appearing at 3 pm in the afternoon each nine hours after the effects began at 6 am in the morning or 6 pm in the evening. There were nine graphs each showing that the slopes of decrease in streamflow were greater during the baseflows of day periods compared to night periods. These data therefore indicated that during the night the only withdrawal of water from the watershed was from baseflow and low level nighttime evaporation but during the day in addition to baseflow loss evapotranspiration also removed water. The slopes of the baseflow recessions were calculated for each night and day flow in which augmentation (augmentation was determined only for the hydrograph for any 24 hour period in which the monotonic constant or decline in baseflow was broken by an increase in flow, even if the increase was over one hour) was not evident (Table 1).

Recession constants K (column 8 of Table 1) were also calculated for the entire period for each date in which baseflows were present. These slopes of baseflow recession from least square regression confirmed the slopes obtained from the daily averages of the hourly observations reported in the yearly USGS published Water Resources Data Record. Where my submission to the 1991 Watershed '91 symposium conducted by the Forest Service in Juneau and also submitted to my CPW appeal relied only upon 3 to 6 data points in the least square analysis where now there are 24 observations for each day analyzed. In table 1 the number of data points analyzed range from 24 for one day analysis e.g., 8/24-8/25 to 72 observations for analysis over three days e.g., 8/5-8/7.

Table 1. Slope constants of baseflow recession (cfs) over 12 hour night and day periods for Stanley Creek, 1993 and recession constants K for over 24 to 72 hours.

Date	1st night	1st day	2nd night	2nd day	3rd night	3rd day	K by hour
6/4- 6/5	-.0015	-.0045	0	-.0068	-	-	.895
6/13	-.0019	-.0167	-	-	-	-	.817
7/7- 7/9	-.0022	-.0123	-.0023	-.0059	-	-	.802
7/15- 7/16	-.0045	-.0114	0	-.0138	-	-	.818
8/2- 8/4	-.0039	-.0109	-.0056	-.0136	-	-	.770
8/5- 8/7	-.0110	-.0143	-.0023	-.0083	0	-.0072	.825
8/8- 8/10	0	-.0109	-.0066	-.0147	0	-.0171	.838
8/24- 8/25	-.0090	-.0129	-	-	-	-	.744
8/31- 9/2	-.0039	-.0080	-	-	-.0055	-.0115	.872 .852
Sum	-.0392	-.1043	-.0170	-.0634	-.0055	-.0359	8.23
AV.	-.0043	-.0116	-.0028	-.0105	-.0018	-.0119	.823

file\_93diur12

These slopes may be converted to the familiar recession constants K for each 12 hour night and day period through the relation

$$K = 1/e^a = e^{-a}$$

where a is the slope constant of the regression of baseflow by hour and e is the base of natural logarithms.

From table 1 the average rate of change in streamflow during the night period measured every hour from the stream gage was found to be -0.00344 cfs (Table 2). Because this nighttime decrease in



streamflow can be assumed to be free of direct effects of transpiration due to plants the nighttime rate is therefore a measure of streamflow drainage due to primarily gravity flow. Because gravity flow will continue during the day time the effect of daytime transpiration and evaporation could be estimated by subtracting from the average daytime rate -0.01132 cfs (Table 2) the night time rate -0.00344 to then give -0.00788 cfs. This subtraction and partitioning of the gravity effects upon baseflow from the effects of plant transpiration was possible because the nighttime rate due to gravity flow and night time evaporation would also occur during the daytime baseflow. Evaporation would increase however for days because days are warmer than nights. The daytime rate of table 1 therefore are higher and about double the night time rate (See Table 2). These relations may be expressed as follows which however includes the error in the daytime evaporation in which the daytime evaporation could not be estimated from the data.

Table 2. Means of night and day recession rates (cfs) for data reported each hour over 12 hour periods. (from Table 1)

night	0.00344
day	0.01132
day - night	0.00788

From the exponential relation  $Q_t = Q_o \cdot e^{-0.00344 \cdot 12 \text{ (hours)}}$  then by the definition of recession constants  $K$  let  $K^{12}_n$  be the night time recession constant obtained from

$$1/e^{0.00344 \cdot 12}$$

The 24 hour recession constant for gravity flow would be  $K^{24}_n$  or

$$1/e^{0.00344 \cdot 24} = .92 \quad (1)$$

The recession constant for daytime  $K^{12}_d$  would respectively be therefore,

$$1/e^{0.00788 \cdot 12} = .90. \quad (2)$$

The overall recession constant can therefore be expressed as the product of two coefficients.

$$K_{n,d} = K^{24}_n \cdot K^{12}_d \quad (3)$$

$$= .83$$

This value of  $K = .83$  closely agrees with the average  $K$  shown in

table 1 (column 8).

From the unpublished paper I submitted to the 1991 FS symposium I argued that the pre-logging value of K based upon the 1965-1966 data prior to logging was 0.92 or the same value which the 1993 data of Table 1 gives for nighttime baseflow change as shown in (1) above and the tables. However I suggested the cutting resulted in K to increase to about .95 which would provide an estimate to the rate of evapotranspiration of the old growth forest compared to the logged forest. This result was consistent with Bartos (1989) who reported an increase in streamflow following logging. But then there seems to be a case of missing evapotranspiration because by 1993 it appears that evapotranspiration returned with nighttime rates alone producing a K = .92 suggesting that the 1965-1966 pre-logging rates of evapotranspiration were again near pre-logging rates but the daytime rates far exceeded the 1965-66 rates. This observation might suggest the old growth uncut forest evapotranspiration was relatively small compared to the evapotranspiration 30 years after the logging had begun. Stated in another way the difference between pre-logging K = .92 and logging K = .95 could be the same value of the natural drainage rate established at night time in 1993 (Table 1). There are questions raised here which required further analysis and time but not available at present.

#### Other comments.

Big Creek, formerly 108 Creek is a classic case of stream destruction through logging activity. Increases in sediment have been documented but the draft EIS is oblivious to such changes and does not explore these adverse effects (see pages 3-46-3-47).

Calder Creek was one of the watersheds in which exact counts of salmon spawning escapements were known though a counting weir operated by the Federal Government. This historical data base though preserved in the records should have been respected by preserving this watershed and prohibiting future logging activities so that escapements known during pristine conditions could be compared to escapements during later times. Such was not the case for Calder Creek and the Forest Service has almost systematically logged every watershed upon which such baseline observations had been made.

#### Literature cited.

- Bartos, L. 1989. A new look at low flows after logging. Proceedings of Watershed '89: A Conference on the Stewardship of Soil, Air, and Water Resources. Juneau Alaska, March 21 through 23, 1989. Forest Service, Alaska Region. p. 95-98.
- Murphy, M. 1985. Die-offs of pre-spawn adult pink salmon and chum

salmon in Southeastern Alaska. North Am. Jour. of Fish Mgmt. 5:  
302-308.

Note:

I requested this draft Lab EIS earlier and after not receiving it for over one week, had to telephone again. I hope to Forest Service would be more prompt in such important matters in the future.

Sincerely,

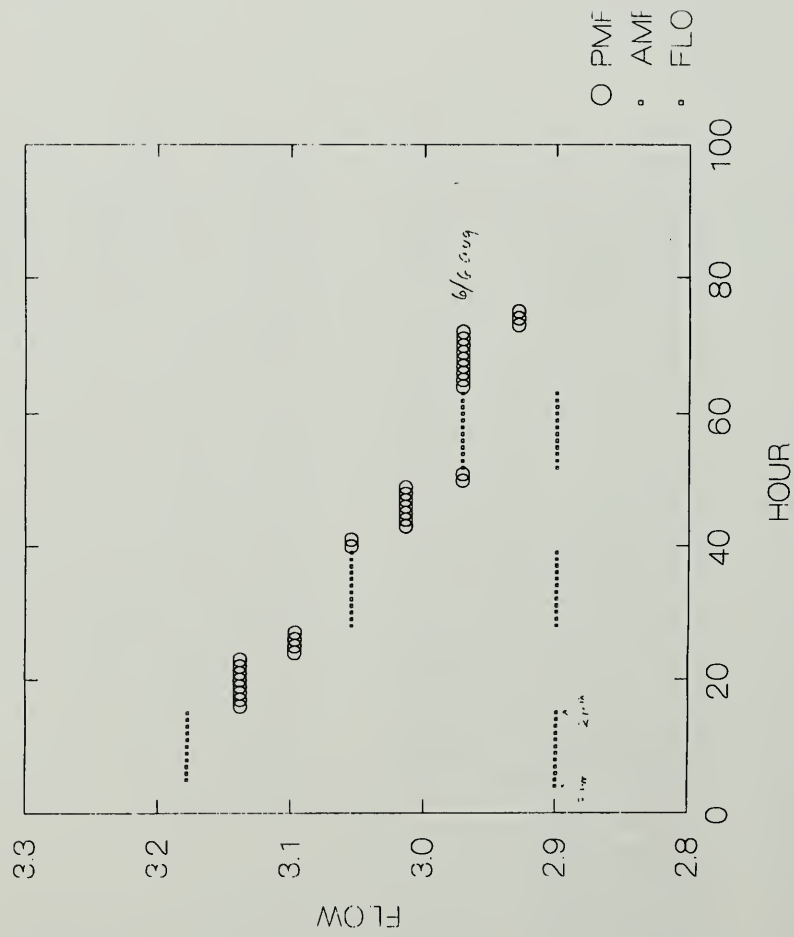
Richard T. Myren  
3320 Fritz Cove Road  
Juneau, Al 99801

September 29, 1995  
file evap15



Start Sub 1903

9/13 am



6/6 509

## Responses to Alan Stein

## COMMENTS OF

ALAN STEIN

## CONCERNING

## LABOUCHERE BAY DRAFT EIS

Forest Supervisor  
Tongass National Forest  
Federal Building  
Ketchikan, Alaska 99901

October 10, 1995

## I Request to Supplement and for consideration of these comments

A. Mud slides in Salmon Bay, which I believe entered streams, occurred this year and I requested monitoring data many weeks ago, but I have not yet received monitoring data from the regional forester concerning them. I delayed response to the EIS pending receipt but feel I must respond without their benefit. When you provide them, I ask I be allowed to supplement these comments with the mud slide monitoring data on clearcuts and roads that impact the sockeye streams in Salmon Bay.

B. In the meantime, I ask these comments be printed in the final document and response be made to my comments numbered below.

## II Request no logging or roading be permitted on karstland.

The risk to salmon streams is irreparable loss.

The area contains a vast underground network of aqueducts connecting caves in which unique anthropological data, flora, and fauna have been discovered. The aqueducts underground provide a unique method of carrying water and mud to salmon streams. This geology is rare on the Tongass and deserves unique protection.

A. "No other place in the world" contains such a unique limestone geology so far north.  
EIS 3-9

B. At least one unique cave adaptation of an animal has occurred that exists nowhere else in all of western North America. 3-16.

C. Cariboo bones some 40,000 years old have been found in caves in the area. Personal communication. Not in EIS

D. 4,000 years old aboriginal remains in caves have been discovered. Personal communication. Not in EIS

AS-1

Your comments have been included in the Lab Bay Public Comment record. As cited in your letter and the EIS, karst resources in the Project Area provide unique ecological paleontological, cultural and recreational values. The monitoring data you requested was provided on October 31, 1995.

AS-2

Alternatives 3 and 6 of the Final EIS defer harvest and road building on high vulnerability karst. Please refer also to response to AK-8.

AS-1

AS-2

# Responses to Alan Stein

AS-3 Your comment supporting Alternative 3 with the exclusion of any acres located on karst is noted.

- E. Salmon production may be vastly greater if charged with karst water. 3-17
- F. A reasonable inference is that many more important scientific discoveries are to be pulled from the caves provided they are not flooded or physically destroyed due to logging. Whether discoveries may provide medicines or extend our understanding of the iceage depends on adequate protection. 3-21 paragraph 9
- G. Yet logging and roading create "lasting and potentially irreversible" effects. 3-20. paragraph 4. Recovery can take centuries. "In human terms, this effect is permanent. 3-21
- H. The cave systems would be affected by logging due to flooding or transport of mud 3-20. Mud need move only a few feet before it can fall into the aqueduct system. 3-18 and personal communication.
- Logging can
- plug flow paths
- increase sediment in caves
- alter flows through the system
- flood or dryout passages
- Recovery can take centuries 3-21
- I. But mud that enters the underground aqueduct-cave system can surface in unpredictable places miles from where it enters in a way that "cannot be predicted." 3-18, 3-21 paragraph 3.
- J. Muddied streams can occur even though they are not logged and buffers are intact along them. 3-21
- K. There is no way to predict where underground muddied water will appear or how long after the event. It sometimes takes weeks after an event. 3-21. Personal communication.
- L. Amazingly, the mud can enter from resurgences of underground water that has in turn been muddied by logging or road wash outs in areas miles away and even on the other side of ridges. Experiments have been conducted which confirm these facts. Personal communication.
- M. This phenomena was unknown at the time Judge Von der Heydt enjoined logging next to salmon streams in Stein v Barton (Alaska, 1989) or at the time of passage of the Tongass Timber Reform Act's buffer strip no cutting requirement (1990).

AS-2

III Since harvest on karst can result in "irreparable resource damage," 3-24 and mitigation is not possible(3-29), I request no logging on karstland in the area and suggest the alternative chosen be #3 with the elimination of the 23 acres specified in the alternative.

AS-3



## Responses to Alan Stein

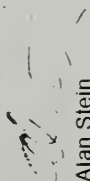
AS-4 Your comment recommending no further harvest in the Project Area until hydrologic tests are performed is noted. The Forest Service believes that implementation of the draft standards and guidelines, as incorporated into alternatives 3 and 6, will protect karst resources.

AS-3 [ Draft protection guidelines cannot be met if logging occurs. 3-30.  
IV In addition, because there is no way of knowing if non karst harvest may drain into karst areas, I recommend no cutting in the area at all this rotation until extensive hydrological tests prove otherwise. Over 50 percent of the trees have been harvested from the area in the first 20 years of logging and it is likely that by 2054 almost no trees will be left. Almost all the logging was on high karst table 3-8 and figure 3-5.

AS-4 [ I reserve my right to comment on the violation of the Tongass Timber Reform Act LUD 2 area in Salmon by loggers and poor Forest Service planning on steep slopes that I protested in 1989 that resulted in mud entering part of the sockeye stream system during the last cutting period. Poor monitoring and enforcement of guidelines and more importantly planning were responsible for that debacle.

In many ways however I am impressed with an improved candor in the document.

Sincerely yours,



Alan Stein

my temporary address is 152 8th st  
Del Mar, ca 92014

Please send response here until notified otherwise.

PS I have commented on every EIS for this area since 1974 except one and successfully sued the Forest Service in 1975 (Zieske v Butz) and 1989 (Stein v Barton). I am an Alaskan commercial fisherman who this year utilized waters that drain from the project area.

## Responses to Alan Stein

AS-5 The ADF&G letter of 9/23/92 and the Forest Service response are on file in the Ketchikan Administrative Area and Thorne Bay Ranger District.

152 8th St.  
Ded Mar, Ca 92014  
10/18/95

Reginald Forester

Juneau, Alaska

Please add this letter and attached  
of fish & game on Bristol Strip violations  
to the hachuck Bay EIS final  
document as part of my supplemental  
comments.

Thank you.

Alan Stein

Alan Stein

Attachment

USDA FOREST SERVICE  
RECEIVED  
ALASKA REGIONAL OFFICE  
95 OCT 24 AM 8:10

AS-5

## Responses to Joseph Sebastian

- JS-1 Your comment opposing further harvest in the Project Area is noted.
- JS-2 The Calder Tie Road is not proposed under Alternative 6 of the Final EIS. Your comment will be considered by the Decision Maker when choosing the final alternative.
- JS-3 Your comment has been considered along with others and is reflected in Alternative 6 of the Final EIS. This alternative defers harvest on all units located north of the 20 Road between Shine Creek and Protection Head.

- JS-1 First off, this LAB EIS plan is too wrong to proceed. I reject the whole so-called grasping mess. You the USFS ARE killing our land, killing off our wildlife and creating a disaster of epic proportions. I suggest you cancel the KPC contract and start over with something the 'land' can support and the island can live with. You are killing us, by killing our land. There should be no further cutting on N. Lab Bay for at least a 100 years until all the clearcuts have reached pre-logged growth conditions. Your stupidity is killing our land. Please stop it.
- JS-2 The Calder/LAB Road Link up. — NO, NO, NO, NO, NO, NO. We already made a deal. You put in your Calder Bay floating camp in lieu of the road. We do not need 'Tut' Road link up. Remove it from all your options. I PROMISE you a SERIOUS BATTLE for it should you persist. It's not worth it. Face it. The Mohawk war — since the late 1980's, individuals and the Pt Baker Comm. Ass. have repeatedly asked that from Shine Ck, north and west of the 20 road to Protection Head be spared from any further cutting. We (forestworkers) prefer this area to be removed from the timber base, since that is the only way for it to be safe it seems. This could be done then the latest Tump Revision. If you todayed to our concerns like you do the pulp mills it would already be safe. The standing Mohawk strips that are left provide the only wildlife corridors left into our 1600 acres of state land. Presently you have the following units in the pool that are VCU 527 - units 228-227-229 226-206 - ~~226~~ VCU 529 - units 286-285-259-257-270 VCU 530 - units 241. These listed units need to be removed from the unit pool. VCU 527 unit 224 also needs to be pulled due to wind break considerations. Why can't our twin villages be given a little courtesy, a little respect by protecting what little wildlife habitat and cover that we have left in our wilderness? Why does not our future seem to matter, but only the pulp mills next raft of logs. Must we all die to grant them 2 days of operation?
- JS-3 Our 1600 acres of state land. Presently you have the following units in the pool that are VCU 527 - units 228-227-229 226-206 - ~~226~~ VCU 529 - units 286-285-259-257-270 VCU 530 - units 241. These listed units need to be removed from the unit pool. VCU 527 unit 224 also needs to be pulled due to wind break considerations. Why can't our twin villages be given a little courtesy, a little respect by protecting what little wildlife habitat and cover that we have left in our wilderness? Why does not our future seem to matter, but only the pulp mills next raft of logs. Must we all die to grant them 2 days of operation?



## Responses to Joseph Sebastian

JS-4

Alternative 6 of the Final EIS defers harvest on all units located in the vicinity of Memorial Beach. Expansion of the Memorial Beach Park is outside of the scope of this EIS, but will be considered by the Ketchikan Area in its recreation planning.

JS-5

Your comment opposing harvest of units 532-228 and 229 is noted. These units are not proposed for harvest under Alternatives 3, 4, and 6 in the Final EIS.

- 2
- Humpty Creek/Alder Creek Memorial Beach - Alt 6 I did not find it in your EIS, in May 1993 The Point Baker Comm. Ass. sent the USFS a resolution requesting that the USFS add the Humpty Creek headland to the existing memorial beach park. Lets face it, Memorial Beach is too small, future needs on the island need to recognize that we need to keep our beach front intact. We were even willing to accept a small 4 or six unit camp ground complex with a tent system linking Memorial to the Humpty Creek headland. We would be happy to disburse this further be fore the on the ground wildlife patterns as I know it for that area, you would plainly see how important that stretch of ground is from unit 286, VCU 529 East to some creek/Buster Bay really is. I have seen a family pod of 10 and others right there. Numerous spring black bear cubs are to be found on the beach in that area and does rise there from along the beach there. Every morning the beach has fresh deer tracks on it. These animals need more than 500' Goddam foot of timber to keep a live in. Don't forget it? Our lives are tied to those animals. Lives. We don't shit in our own nests, but you the USFS and the pulp mill. Sure foul our nest bad. VCU 532 - units 228 & 229. Oh my God. Haven't you guys fucked red bay to death already? Look at it. Have you no shame? Yet now you have to go in and plunder 2 units more from a place that is almost wholly Clement? You may not feel the pain I feel when I still lost red bay in my boat, but you broke the law in red bay. Red Bay is a crime. A sin, red bay has been murdered. And now you show up for more?!*
- VCU 534 - 534.1. That's real nice of you guys to build KPC a private road to their private in holding on natural forest lands at California Beach. How corrupt can you get? This stinks of corruption. Bad news is that is a valuable Point Baker hunting ground and has been for the past 70 years. A road would heavily impact the place.
- JS-4
- JS-5
- JS-6

## Responses to Joseph Sebastian

JS-6 Refer to response to SEACC-9.

JS-7 Your comments have been considered, along with those of others, and are reflected in Alternative 6 of the Final EIS.

3  
This road would only access very marginal timber to begin with. It's the road that is the killer. No, no no road. If you want to helicopter the timber out, go ahead, but no road link VCU 534 units 228-226-225, VCU 534.1 units 282-211-204. The poor timber there does not justify the cost of the road. Also we should not have to subsidize KPC's private drive-way to their private property. How goddamn corrupt can you get? We'll pay them in timber to build a road to their private property. What gives them the right to build their corrupt road link to their private property and have the taxpayers pay them to do it? My suggestion, drop this road and make up the scrub timber some place else. Otherwise you may be explaining to the judge why the taxpayers are footing a 10 million dollar bill and building KPC a private drive way that worthless muskeg to their private property which would vastly increase the value of KPC's private property. Don't you think?

JS-6

There is much of the plan I can not answer to, having no personal knowledge of Thon Island, Red Lake, or a dozen of other areas in the plan.

Let me restate, to soften the blow on Pt. Baker/PT Protection Alt. 3, VCU 529 units 270 (absolutely) 286-258-257.

JS-7 VCU 534-534.1 226-225-212-211-204, all need to be dropped from Alt 3 or find the timber some place else.

It is imperative that these units be withdrawn to reduce the negative effects that this plan will have on us anyway. God know the whole plan deserves to go down the toilet, but the above units need to go down if we are to protect our subsistence uses and meet the wildlife demands for habitat in the upcoming years. You must live a lie, or else you would not be destroying our lives like this so some corrupt pulp mill can chug along one more greedy day.

## Responses to Pete Smith, Valery White

PS-1

Your comments have been considered, along with those of others, and are reflected in Alternative 6 of the Final EIS. Alternative 6 emphasizes protection of high value karst, wildlife, subsistence, and visual resources.

PS-2

The bridge crossing 108 Creek would be a temporary replacement using existing approaches. Since the approaches are in place, very minimal disturbance of 108 Creek should result from the use of this road. The 2720 Road could be used but would require three to four times the length of road construction. The bridge would not be required under Alternative 6 of the Final EIS.

PS-3

The log stringer bridge at Snoose Creek was replaced with a standard 16-foot wide temporary modular bridge during the 1989-94 sale, with the intention that it be removed after use to close the spur road. Subsequent State land transfers resulted in private land allocations behind the bridge, and currently private landowners are using the bridge to access their land. The bridge will remain in place while the Forest Service negotiates an access plan with the landowners. The Thorne Bay District will review the bridge to ensure that appropriate object markers are in place.

Pete Smith  
Valery White  
Po Box WWP (Whale Pass)  
Ketchikan, AK 99950

September 28, 1995

Forest Supervisor  
USFS, Ketchikan Area  
Federal Building  
Ketchikan, AK 99901

RE: Draft Environmental Impact Statement, Lab Bay

Dear Forest Supervisor,

As year round residents and landowners, we have many concerns about the Forest Service's plans for the Lab Bay Project Area, which is our home.

In November 1994, at the scoping meeting in Whale Pass, residents expressed much concern about Thorne Island, watersheds and water quality. Instead of addressing all these concerns in one alternative, they have been split into two. Alternative 4 has less impact on the view by eliminating a Log Transfer Facility on Thorne Island that doesn't meet the VQO for the area. However, Alt. 4 includes Units 538-210 and 540-221 which are in the watershed of two (and potentially more as more landowners move in) residences and the Whales Resort lodge, also Unit 538-208 whose Unit card in Vol. 2 of the DEIS doesn't address visual impact as an issue even though the Whales Resort Lodge has expressed much concern over the harvest of this unit which is visible from the resort lounge. Alternative 5 eliminates all the controversial Units surrounding Whale Pass, but puts Thorne Island on the chopping block with large clearcuts and another LTF in our small bay.

Unit 538-223 requires a temporary bridge to be installed across 108 creek. According to Forestry Sciences Lab data, in the '50's there was a 100,000 fish Coho run up 108 creek, now the run has diminished to less than 10% of that. 108 is also home to a declining run of steelhead, and is a very important resource for this community. We believe it would have less impact on the creek to access the unit by road 2720 which already comes close to the top of the unit.

In response to the planned closure of Road 3060 by removal of the bridge across Snoose Creek: Please note that there are two residences on the other side of that bridge! We have submitted comments and called the District Ranger about this issue and still it appears on maps as a planned closure. Why are we being ignored? Road 3060 is also an important access road used by the community for recreation, subsistence hunting, firewood and Free Use wood gathering, also there is much second growth on this road that will require thinning in the near future.

PS-1

PS-2

PS-3



## Responses to Pete Smith, Valery White

- PS-4** VCU 538 has already been 75% clearcut. What forest remains should be left for wildlife habitat and as a community resource for the future. To prevent further fragmentation of the North Neck Lake Wildlife Area, and to protect the view from Whales Resort Lodge, Unit 538-208 should not be cut.
- PS-5** Exchange Cove is the site of the only designated campground on this end of the island. It is also a much used anchorage and an important recreation area. Unit 539-220 and 221 are an unacceptable impact to the view from this area.
- PS-6** We are alarmed at statements on p. 2-8 to 2-18. Specifically "that current timber supply is sustainable through 2034 only if falldown and changes in land use are considerably less than estimated using currently available data and assumptions". We believe, based on trends of the past few years, that they will be considerably more which will result in a drastic reduction in timber supply, negatively impacting our community's economic stability. Sustainable harvest is required by law. In the interest of maintaining economic stability on Prince of Wales Island, it is unrealistic to base sustainability on the whole Tongass. This practice may be feasible in a small forest, but because the Tongass is in an archipelago setting and communities are scattered and isolated, it is only logical to plan for economic stability and sustainability by sale area.
- PS-7** Being a family highly dependent on subsistence, we are alarmed that all action alternatives "may result in a significant restriction of subsistence use of deer and bear for area residents." The Forest Service is required by law to protect subsistence resources, and manage for multiple use. Are the families of Prince of Wales Island communities going to be required to travel hundreds of miles to find food as well as work?
- PS-8** All action alternatives show a Present Net Value of at least -10 million dollars. It is common knowledge that the fine slow growing old growth trees are of much higher value than their second growth replacements will be. How is it possible the government could lose so much money selling such a rare resource?
- PS-9** We believe that until the Forest Service can create a sustainable harvest alternative that protects wildlife habitat, scenic quality and watersheds of communities, the only alternative worth considering at this point is Alternative 1.
- PS-4** Alternative 6 of the Final EIS does not propose to harvest unit 538-208.
- PS-5** These units would meet adopted Maximum Modification VQO and CVD guidelines. However, harvest would result in FVC 6 (excessive alteration) designation. These units are deferred from harvest in Alternative 6 of the Final EIS.
- PS-6** Sustained yield forest management is defined by the National Forest Management Act on a Forest by Forest basis. The Tongass National Forest is therefore the legal scale at which sustained yield is calculated.
- PS-7** Refer to response to JK-3.
- PS-8** Net present value calculations discount all future costs and benefits to the present time period. While the value of the timber may be high, the cost of establishing a transportation infrastructure is also high. The cost of the transportation system is paid during the current time period, even though a portion of the timber accessed may not be harvested until future periods (units that are in between currently proposed units). Therefore the costs appear higher than the benefits because the cost all appear in the current time period while the benefits appear over many future time periods.
- PS-9** Your comment opposing further harvest on the Project Area is noted.

Sincerely,



## Responses to William Shoaf

### WRS-1

Your comment regarding the Project's potential to affect your lifestyle and economic well-being is noted. The EIS and the Subsistence and Economic Resource Reports discuss potential effects of the proposed action on socio-economics and the quality of life. These are concerns that have been seriously considered.

### WRS-2

There are a number of reasons why the Lab Bay Project EIS has taken longer than many of the previous Forest Service EIS's. Scoping for the Lab Bay Project occurred in August 1991. Subsequently, it was determined that the Forest Service would contract out the EIS preparation. The contract was awarded in February 1992, at which point Harza Northwest began preparing the LSTA. Unlike the CPOW and North Revilla EIS's, it was decided that the Lab Bay Sale would be based on a field-verified pool of units. This would allow better unit and mitigation design and would identify areas unsuitable for harvest early in the process, rather than at final layout. The primary field season for the Lab Bay Project was 1992. During late 1992 and 1993, field data was analyzed, resource reports were prepared, and alternatives were developed for the project. During spring of 1993, an internal review of Forest Service compliance with TTRA proportionality requirements led to changes in the Management Area boundaries to be used for the Lab Bay proportionality calculation. As a result, it became necessary to defer harvest on approximately 27 units and to redesign all of the Project alternatives. The redesign of alternatives and recalculation of effects for the Draft EIS was completed in September 1993. During a Forest Service review of the Draft EIS in October 1993, it was decided to stop work on the EIS temporarily, to allow additional information to be collected for karst resources. During winter of 1994 the Karst Vulnerability Assessment, Phase 1, was developed and used to assess the Project Area. Field verification of the assessment, Phase 2, was conducted during August 1994. Preparation of the Draft EIS, including development of a new alternative to avoid impacts to karst, was resumed in September 1994. Supplemental field work including stand exams, goshawk, and rare plant surveys was conducted in September 1994 and July and August 1995. The Draft EIS was published in July 1995.

A comparison of the Lab Bay EIS and its supporting appendices with the CPOW or North Revilla EIS's shows that the Lab Bay Project was undertaken from a perspective of acquiring site-specific field data prior to sale layout. This approach involves greater expense and time to com-

September 3, 1995

Robert Vaught, Forest Supervisor  
Tongass National Forest  
Federal Bldg  
Ketchikan, AK 99901

Mr. Vaught:

Thank you for the opportunity to comment on the proposed Lab Bay Draft EIS. I am commenting as a local resident, property owner, subsistence user, and commercial fisherman. Consequently, the proposed action has the potential to markedly affect my lifestyle and economic well-being.

### WRS-1

It seems an inordinately long time since the initial scoping began for this project--August 1991. During this same time frame, both the CPOW and North Revilla DEIS's, FEIS's, and ROD's were completed. It is my understanding that CPOW and North Revilla were completed by Forest Service staff, while Lab Bay and the only recently completed Polk Inlet were assigned to professional service contracts. I am very concerned at the cost and slowness of these contract-produced EIS's. I have heard that the Government has spent over \$4 million in the preparation, administration, and execution of the Lab Bay EIS contract. This would imply that the NEPA evaluation alone would cost approximately \$50/mbf -- and that assumes full volume recovery, i.e., zero falldown, which is unlikely. I question the cost effectiveness of this project, as the NEPA cost alone (not to mention Agency sale prep and sale administration costs) exceeds the expected net stumpages for any of the alternatives, even at reduced operator profit and risk (Tables 3-124 to 3-127). The 'best' alternative has a projected PNW of NEGATIVE 10 million dollars. I formally request to have cost recovery of the Lab Bay project included as a significant issue for the Final EIS.

### WRS-2

I am deeply concerned at the Purpose and Need statement for this project -- to contribute no more and no less than 85 mmbf to the continued execution of the KPC long-term contract. There is the insinuation that this sacred 85 mmbf is somehow emblazoned in the Forest Plan and therefore must be duly executed with no consideration given for any other alternative volume. Yet when I recently FOIA-ed your office for any and all information contained in the Forest Plan that exactly 85 mmbf was scheduled for this project area during this time frame, I was told there was no such information within the existing Forest Plan (imagine my surprise!), but there was "one document within the scope of your request" in the Draft FEIS Proposed Forest Plan. This single document provided to my FOIA request was a 10 year timber sale schedule dated October 13, 1992 -- over one year after the Notice of Intent (i.e., to harvest 85 mmbf) for Lab Bay was published. This is a classic example of the 'tail wagging the dog'. The fact of the matter is that there is no capability within the TLMF timber base to disaggregate project area specific volumes for

### WRS-3



## Responses to William Shoaf

September 3, 1995

Robert Vaught, Forest Supervisor  
Tongass National Forest  
Federal Bldg  
Ketchikan, AK 99901

Mr. Vaught:

Thank you for the opportunity to comment on the proposed Lab Bay Draft EIS. I am commenting as a local resident, property owner, subsistence user, and commercial fisherman. Consequently, the proposed action has the potential to markedly affect my lifestyle and economic well-being.

WRS-1

It seems an inordinately long time since the initial scoping began for this project--August 1991. During this same time frame, both the CPOW and North Revilla DEIS's, FEIS's, and ROD's were completed. It is my understanding that CPOW and North Revilla were completed by Forest Service staff, while Lab Bay and the only recently completed Polk Inlet were assigned to professional service contracts. I am very concerned at the cost and slowness of these contract-produced EIS's. I have heard that the Government has spent over \$4 million in the preparation, administration, and execution of the Lab Bay EIS contract. This would imply that the NEPA evaluation alone would cost approximately \$50/mbf -- and that assumes full volume recovery, i.e., zero falldown, which is unlikely. I question the cost effectiveness of this project, as the NEPA cost alone (not to mention Agency sale prep and sale administration costs) exceeds the expected net stumpages for any of the alternatives, even at reduced operator profit and risk (Tables 3-124 to 3-127). The 'best' alternative has a projected PNV of NEGATIVE 10 million dollars. I formally request to have cost recovery of the Lab Bay project included as a significant issue for the Final EIS.

WRS-2

I am deeply concerned at the Purpose and Need statement for this project -- to contribute no more and no less than 85 mmbf to the continued execution of the KPC long-term contract. There is the insinuation that this sacred 85 mmbf is somehow emblazoned in the Forest Plan and therefore must be duly executed with no consideration given for any other alternative volume. Yet when I recently FOIA-ed your office for any and all information contained in the Forest Plan that exactly 85 mmbf was scheduled for this project area during this time frame, I was told there was no such information within the existing Forest Plan (imagine my surprise!), but there was "one document within the scope of your request" in the Draft FBIS Proposed Forest Plan. This single document provided to my FOIA request was a 10 year timber sale schedule dated October 13, 1992 -- over one year after the Notice of Intent (i.e., to harvest 85 mmbf) for Lab Bay was published. This is a classic example of the 'tail wagging the dog'. The fact of the matter is that there is no capability within the TLMF timber base to disaggregate project area specific volumes for

WRS-3

WRS-2  
(Cont.)

plete, but has the advantage of providing verified information with a high degree of implementability. The CPOW EIS, which included partial field verification, cost approximately 5.5MM\$. The Lab Bay EIS, which includes full field verification and karst studies, will cost approximately \$4.0.

Refer to response to TCS-1 regarding cost recovery.

WRS-3

The purpose and need for action stated in the Lab Bay Draft EIS was in part to help satisfy the timber volume needs of the Long-Term Contract with Ketchikan Pulp Company (KPC). For the purpose of this project



## WRS-3 specific timeframes.

I'm going to suggest another scenario for the Purpose and Need for Lab Bay, as well as for CPOW, North Revilla, and Polk Inlet. In 1991, the Ketchikan Area planning staff were working on the sequel to the 1989-94 LRS EIS. The Ketchikan Area Planning Staff Officer and the Timber Staff Officer had a meeting with the Regional Forester to discuss a volume target for this project. The Planning Staff Officer made a proposal for 600 mmmbf, to which the Regional Forester replied 'less than half that amount'. The Planning Staff Officer replied 'OK, 300 mmmbf', to which the Regional Forester replied 'I said LESS than half that amount'. The Planning Staff Officer said 'OK, 290 mmmbf', and THAT became the target volume for CPOW -- not some purported commandment from TLMP. It is also interesting that the combined target volumes for Lab Bay (85 mmmbf), Polk Inlet (125 mmmbf), CPOW (290 mmmbf), and North Revilla (200 mmmbf) sum to exactly 600 mmmbf. What a coincidence! The Forest Service is attempting to pass off an arbitrary management decision as a self-proving fact and then assert that it is stated in the existing Forest Plan. It simply isn't so.

## WRS-4

### WRS-4

As stated in the Lab Bay Draft EIS the determination of 85 MMBF as meeting the purpose and need for the project was a management decision based in part on the current schedule to provide timber for the KPC long-term contract. The stated purpose and need is an estimate. The Draft EIS preferred alternative for the Lab Bay project amounts to 66 MMBF, the ROD for Polk Inlet cleared 113 MMBF for harvest, the ROD for CPOW cleared 267 MMBF, and the ROD for North Revilla cleared 205 MMBF. These volumes total 651 MMBF. Totalling the stated volumes for each purpose and need would yield 700 MMBF rather than 600 MMBF as stated.

### WRS-5

Long-Term contract clause BO-52 specifies that "the average annual amount of pulptimber...during the period...shall be....a maximum of 35,000,000 cubic feet...". (Using the contract specified conversion factor of 5.5 board feet per cubic feet, 35,000,000 cubic feet equates to 192.5 MMBF.) This amount is an "average annual maximum" as defined over a 5-year operating period. Clause BO-52 does not require that the maximum is not exceeded for any individual year within the 5-year operating period. (See Appendix A.)

### WRS-6

Reformulation of the purpose and need for this project is outside the scope of this EIS. The 1996 TLMP Draft Revision addresses the issue of long-term timber supply including falldown across the Forest.

### WRS-6

Your comment regarding estimation of implementation falldown is referred to the 1996 TLMP Draft Revision. The TLMP Planning Team has used site-specific project information from Lab Bay and other EIS's; updated resource information, such as the Ketchikan Area update; and previous studies on falldown; and has incorporated them into the Forest planning process. The 1996 TLMP Draft Revision provides alterna-

Finally, the Purpose and Need speaks to a necessity of providing 205 mmmbf to KPC annually. KPC Contract Clause BO.52 clearly specifies a maximum average annual cut over a 5-year period of 192.5 mmmbf. Also, now that the entirety of the Tongass National Forest (instead of just the Ketchikan Area Primary Sale Area) is being used to feed the KPC contract, I feel it is time to reallocate the amount of timber each project must deliver. I formally request the Purpose and Need for this project be reformulated and new set of alternatives be analyzed.

Another major concern I have is sustainability of the the project area's timber supply, which provides the major source of wood for several isolated timber-dependent communities. There is reference to "15.4 % hard falldown" in Table 3-68, which was derived from the Draft Control Lake Cumulative Effects Analysis. This 15.4% figure represents 0.4% estimated planning falldown PLUS (key word here) 15% layout implementation falldown. This figure is grossly understated, and I formally challenge it.

The 0.4% planning falldown was incorrectly calculated by comparing the total acreage (71,410 acres) derived in the Control Lake version of the CPOW MELP with the 1979 TLMP suitable-available acres (71,666). Yet on page 3-8 of the CPOW Draft SEIS it clearly states that 71,410 acres was derived from the much larger TLMP Draft Revision Alternative P suitable-available base (114,260 acres). This yields a planning falldown of

## WRS-5

## WRS-6

## WRS-7

Responses to William Shoaf

tives for future timber harvest and land management based on the best information available at this time.

Refer also to responses to AK-3-5 and SEACC-16.

**WRS-7 - 10** The commentor is referring here to information that is presented in the Draft Supplement to the Final EIS for the CPOW Project Area, not the Lab Bay EIS. Refer to the 1996 TLMP Draft Revision for analysis of long-term timber supply.

(114,260 - 71,410) / 114,260, or 38%. More importantly, it yields 100 - 38, or 62% implementation during planning; this is a key point.

Secondly, the 15% layout falldown is based solely on differences in CPOW ROD acres vs. CPOW layout implementation acres. This 15%

figure ignores falldown that occurred when the CPOW MELP units were initially field reconnected between the CPOW DBIS and the ROD. A total of 200 units were field reconnected, totalling 9,119 acres. Based on this field recon, only 189 units totalling 8,015 acres were found to be suitable for timber harvest to be brought forward in the CPOW FEIS/ROD (SOURCE: CPOW Planning Record database "FINALTN.DBF".) This represents 12% planning falldown at the get-go, or 100 - 12 = 88% implementation during field recon; this is a key point.

Thirdly, I formally challenge the 15% falldown between the ROD vs. layout acres, because the latter includes layout outside the ROD boundaries (unit expansion). These expanded acres are being cashed in now, and will not be available when the adjacent timber stand is harvested, so falldown will be even higher in the future. This is classic 'rob Peter to pay Paul'. Information the Forest Service has provided to FOIA requests indicate falldown for the first 4 CPOW offerings totals 24%, NOT 15%:

OFFERING	ROD ACRES	DELETED ACRES	NET ACRES
Magnificent 7	288	45	243
Logjam	667	128	539
Halfway House	1116	296	820
Slide/Lava	1157	316	841
	3228	785	2443

The REAL falldown totalled 785 acres from a ROD total of 3,228 acres, which is 24%, based on the Forest Service's own information. More importantly, it yields 100 - 24% = 76% implementation during layout; this is a key point.

The CPOW MELP units were criticized in the CPOW Draft SEIS (page 3-4) as being 'relatively non-difficult' and that 'future projects will rely on a larger portion of their harvest volume coming from isolated and difficult operability areas'. So it seems overly optimistic for the Forest Service to propose that falldown won't increase in the future, as these more difficult units are harvested -- especially since portions of these units are being harvested now through unit expansion. I also note that the 15% figure ignores differences in planned vs. cruised

WRS-7

WRS-8

WRS-9

WRS-10



## Responses to William Shoaf

- WRS-11 and 12** The Forest Service does not agree that falldown is calculated by multiplication of individual percentages. A falldown factor of 5 percent does not represent a 5 percent probability of falldown, it represents falldown of 5 percent of the total acres. Individual percentages can be summed, then multiplied by the total acres to calculate the number of acres expected to 'fall down'.
- WRS-13** Refer to response to TCS-4-6.
- WRS-14** Alternative 6 proposes to harvest 40 MMBF, Alternatives 3, 4, and 5 propose 63.5 to 70 MMBF, Alternative 2 proposes 102 MMBF, and Alternative 1 proposes that no harvest occur. This provides a sufficient range of alternatives.

volume/acres, as a result of harvest of the lesser productive stands within each volume class strata (a direct result of years of high-grading), as well as necessarily reduced harvest per acre from non-clearcut silvicultural prescriptions. But for the sake brevity, I will ignore these items for the moment.

OK, I have mentioned several key points regarding 'implementation' vs. 'falldown' factors. It is mathematically incorrect to calculate the probability of several successive events' occurrence (such as planning falldown followed by recon falldown followed by layout falldown) as the SUM of their respective probabilities -- rather it is the PRODUCT of their

WRS-11

individual probabilities. In other words, they are multiplicative, not additive. Not only did the Forest Service underestimate the falldown factors, but they combined them incorrectly when they ADDED planning falldown to layout falldown.

The REAL falldown is calculated by the planning implementation factor (62%) multiplied by the recon implementation factor (88%) multiplied by the layout implementation factor (76%). This yields an overall implementation factor of 41%, or a falldown factor of 59%. That's right, 59% falldown! I submit that this is a much more accurate assessment of falldown, albeit still conservative. I formally request the Forest Service reassess the Timber Section Cumulative Effects section.

WRS-12

So much significant new information (yes, the "supplement words") has arisen over the last several years: the importance of HCAs; protective measures to prevent listing of the goshawk and wolf; the importance of longer rotations; Tom Ale's findings on the significance of the karst; PACFISH; former-Chief Dale Robertson's direction to reduce clearcutting on National Forests; site specific logging plans which indicate much of the Tongass timber base will likely never be harvested due to infeasible logging changes, economic viability, resource protection measures, etc. I think it is critical to incorporate this new information into a reanalysis of the Tongass timber base to determine if the levels of harvest you have unilaterally decided upon for the Lab Bay (and other) projects(s) is truly sustainable. I formally request that you heed the edict of Chief Thomas and hasten the TLMP Revision and delay Lab Bay (and all other) project(s) until that is accomplished.

WRS-13

Until a new Forest-wide and Area-wide ASQ is established by the completed TLMP Revision or an amendment, I formally request your EIS's analyze alternatives covering a wide range of timber volumes. Otherwise, your actions are motivated by need (long-term contract demand) and faulty logic (existing TLMP) rather than on

WRS-14



## Responses to William Shoaf

the lands's true capability to produce resources at a sustainable level.

Another concern I have is with proportionality -- particularly the proposal for Thorne Island, which was necessarily built into every alternative as the only possible means of achieving proportionality parity in K03. The Thorne Island offering is hopelessly deficit (Tables 3-124 to 3-127) and will likely never be implemented -- more eco-babble, like the Sarkar Ecosystem Management offering in CPOW. The proposed helicopter offering (Altn 4) is completely non-site specific, encroaches the beach fringe, and impacts important cultural resources. In the likely event that Thorne Island is not harvested, then proportionality will go further awry. I formally request that the Final EIS provide another fix for the MA K03 proportionality snafu than the uneconomical Thorne Island offering. It is also important to analyze how much MORE volume class strata 4/5 timber will have to be harvested in the Lab Bay portion of K03, in the likely event that

WRS-15

the 321 acres of volume class strata 4/5 from the CPOW portion of MA K03 are not harvested.

During implementation of this project, I request there be no deliberate unit expansion, i.e., harvest outside the sanctioned ROD boundaries. This longtime practice, which was recently abandoned for the CPOW sale, understates the true falldown that is occurring, and reduces viability of future offerings. Unit expansion during implementation of the 1989-94 offerings is what caused the proportionality departures you are facing ALL Management Areas within the Lab Bay project area. These proportionality departures are also contributing factors to the excessive cost and delay of this project.

WRS-16

APPENDIX A is completely out of date, especially Table 1, which shows Polk Inlet coming on line in 1993 (instead of 1995); Lab Bay, Control Lake, and Upper Carroll coming on line in 1994 (none are out the GATE yet -- pun intended; Heceta (cancelled), Sea Level, and Three Creeks in 1995 (where are they?). This APPENDIX sure doesn't state much of a case for "reasons for scheduling the Environmental Analysis for the Lab Bay Area". APPENDIX A needs to be updated.

WRS-17

I am not in favor of any harvest on any National Forest System lands that contain significant karst features. These have been determined to be of international significance and have been the focus of intensive harvest in the past -- particularly the lower elevation areas. I favor a 10 year moratorium on timber harvest on karst lands and a removal from the Forest Plan on suitable-available timber base for a complete planning

WRS-18

WRS-15 Refer to response to TCS-8.

WRS-16 Refer to response TCS-9.

WRS-17 Appendix A was drafted to provide detailed explanations of items contained in Chapter 1 of the Draft EIS including the project purpose and need, and why the sale is scheduled for the Lab Bay area. Although the specific projections for volume of and date of harvest of future sale areas have changed, the basic premises and conclusions provided in Appendix A have not changed. Lab Bay remains part of the Primary Sale Area under the KPC Long-Term Sale Contract, and will continue to be a high priority area in timber sale planning. An updated Appendix A is provided in the Final EIS.

WRS-18

Your comment opposing harvest on karst, and favoring a ten year moratorium of timber harvest on karstlands and removal from the suitable timber base is noted. Please also refer to response to AK-8.

## Responses to William Shoaf

WRS-19 Refer to responses to TCS-12 and 13.

cycle, or until such time that cumulative effects monitoring shows they can be harvested without impairment.

I have a few other, more site specific comments. Please remove all proposed harvest from the 500 foot beach fringe and 1000 foot estuary buffer. TIMP Revision standards and guidelines are supposed to be in effect, so please use them. Also several proposed harvest units are shown to be composed almost entirely of sub-volume class strata 4 timber. Is TIMYP incorrect, or do you really propose to harvest sub-marginal timber?

Thank you again for the opportunity to comment.

Sincerely,

*W.R. Shoaf*

Bill Shoaf  
6526 Rodgers Pass  
Ketchikan, AK 99901

WRS-19

I'm Anne Archie. I'm the District Ranger at Thorne Bay. I'd like to welcome you to the Lab Bay meeting to hear your issues, questions, and discussions about the Lab Bay timber sale. I'd like to introduce who's here, the folks who have come to help us with the EIS and are going to be taking your questions and information you have.

BY CHARLEY STREULI:

I'm Charley Streuli from Thorne Bay. I work for Anne. I'm the Environmental Coordinator and review the documents.

BY ANNE ARCHIE:

Some of you may already know Kathy Smayda from Harza.

BY KATHY SMAYDA:

I'm Kathy Smayda and I work for a company called Harza Northwest. We are contractors who have been helping to put together the Draft EIS. I'm the team leader of the resource people and the logging engineers that worked on the EIS.

You may have seen us driving around in those green Explorers.

BY ANNE ARCHIE:

Mike Galginaitis, who is from Anchorage and is subcontracting with Harza to produce the subsistence part of the environmental impact statement. And so, as we talked before, Kathy, and Mike, and, I'm sorry, and Robin is going to record our meeting for us. If there are some of you who would like to do a subsistence statement or say anything you feel about how the timber sale is going to affect your subsistence use in the area, this is a good time to do that. Or if you have questions of Mike on how he developed the subsistence part of the EIS, or any of the information he used for the EIS, this is your time to talk to him and make any statement that you'd like to make.

BY JENNY VASSER:

What I want to know is, you're logging back here where there aren't any roads --

BY MICHAEL GALGINAITIS:

Before we start -- this is part of a formal legal process, so we need to get a good record of everything that people say, either as testimony or as questions they have for us. We do have a tape recorder up front. If we could, we would like people to sit while they're talking so that we can get sort of a better sound quality from the microphone. So, I don't know, wherever -- if we could have whoever is talking sort of sit up close here. You don't have to be too concerned -- you can turn a chair the other way actually.



BY JENNY VASSER:

My name is Jenny Vasser and we live out this way. I've noticed on some of these units that you are going to do, you are going to be logging behind us. And I know it's been logged before, but I want to know what it's going to do to our deer population back there. I mean, we all hunt and everything back around in here, and what's it going to do?

BY MICHAEL GALGINAITIS:

Well there is a short answer and a long answer too.

BY JENNY VASSER:

I want a good answer.

BY MICHAEL GALGINAITIS:

What I assume you mean is the local deer population, you don't want an area wide?

BY JENNY VASSER:

No. Just what it's going to affect us right here.

BY MICHAEL GALGINAITIS:

In the short-term, what it does is, it probably -- in years when winters aren't too bad, in the short-term, it actually will increase local deer population because of the increase in deer browse. In the long term, that area will grow up, I guess they say past 25 years it starts to get an even-story canopy, and it actually decreases available food. Deer populations will then probably decrease for quite a significant period of time. And actually, if they do the 100-rotation year sort of thing, it will never regain the habitat capability properties that it has right now. So, you would say, in the short-term, it may increase it depending on winter conditions. In the long term, harvest decreases local deer habitat capability. Which, according to the models, we assume decreases local deer population. You have to realize, we are dealing with models of habitat capability. How that relates to actual populations on the ground -- you know, sometimes deer populations are above what the model says, sometimes they are below. They sort of fluctuate around that number.

BY JENNY VASSER:

Is that going to affect our fish population at all, or our fishing, or anything.

BY MICHAEL GALGINAITIS:

The models we have say it shouldn't, and the Forest Service standards and guides say they take care of that. That isn't an issue that, as subsistence, we looked at too carefully. Well, we did look at it, but we didn't analyze it as much in depth as we did for terrestrial species. One, because management jurisdiction between the state and the federal government still is not sorted out. It's not clear at all that the federal government can make regulations affecting fish. And secondly, the Forest Service beliefs, or standards and guides, adequately address the potential problems on federal land.

## Responses to Comments at Whale Pass Hearing

BY ANNE ARCHIE:

And those would be the buffers, the 100+ buffers.

BY JENNY VASSER:

There's already proposals to reduce that. Not the Forest Service proposal.

BY WILLIAM FANNEMEL:

Who is responsible for the watersheds back there? We all get our water coming right off the rim back there -- the lodge does.

BY KATHY SMAYDA:

There were several watersheds that we were aware of that were pointed out in '92. Those are addressed in Section 1 or 2. And if you find that yours is not addressed, there's -- that's something that has been since '92. The project was delayed for awhile and things have gone on and there may be new information that we need to get, more information on this area that we didn't get somehow, but that's an important point. If you think that you're near a harvest unit that may be near your water supply, then please do let us know. I can show you in the document the ones that we did know about. Let me take another look and make sure that we know where your watershed is and how those are situated.

BY WILLIAM FANNEMEL:

I'm sure you will. My name is William Fannemel and I am the president of Whales Resort, Inc. We own just under four acres in the 538-210 area, and we also -- that is also my official residence. And I'm commenting on partly what you just said. First of all, I sent a registered letter objecting to this over a year ago, actually I think it was 1993. I don't know if Harza considered that or not, but I didn't see it in any of the -- I saw a brief mention of some of our concerns. Well, our water source is a spring located above the resort and just under -- within the drainage of area 210, which I believe is some 30 acres, 30-some-odd acres proposed to be harvested. If you look at that spring, it runs -- the drainage runs straight up slope right into the middle of that property. So if harvested -- if anything is harvested in 210, I believe it will impact our water supply. I've had engineers give me that same input. Secondly, our location has soil instability. We had some with the drought of '93, and then the heavy rains of the fall of '93, we had soil instability. It caused over a \$130,000 worth of damage to our property. We've since restabilized the soil slope, and it's the opinion of our engineers also, that any clear cutting above us, in any of that drainage, would increase the run off and could potentially create further soil instability. So, I imagine, it impacts the Vassers who are our next door neighbors and probably some of the other land owners in that immediate vicinity. Our position is very simple. We've had preliminary engineering input. We are prepared to obtain more if necessary. If that 210 unit is on any alternative to cut any trees, we will appeal, number one. Number two, if we lose the appeal, we'll seek an injunction. Number three, if we lose the injunction and any loss of our water supply, or any soil instability is done, we will then sue any and all individuals or organizations that have any responsibility for both actual and punitive damages. And that's about as strong a statement as I can make. So we think that it's not in anybody's interest I might further add that we are a business. We employ in excess of 25 people on a seasonal basis and we have vested a substantial amount of money, probably in excess of most other businesses on the northern part of the island, certainly not as much as Louisiana

Page 3

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WFW-1

Pacific, so we think that it's in their interest as well to be a good neighbor to not just us because we are a business, but to the rest of us who live here. And the final comment as it affects the rest of the people who are impacted with this very close cutting of the timber -- there's an incredible amount of land on this island that's not within a few hundred yards or a few hundred feet of where people are living and, you know, and it's one thing to talk about view plains from cruise boats and some of these other things that are -- goshawk -- these are important, but I think that the people who live here and, I mean, and the whole management idea of the Forest Service, from my understanding, is that it's for the benefit of all of the people and their interests, not just a large corporation, which has every right to be in business and do everything, so long as they don't hurt anyone else. So I think that you have to take an extremely close look at these things. And 150 yards away doesn't -- let me tell you, when timber starts blowing down, it starts blowing down in direction to where it's standing. Those 150 yards, in a very short time, decrease to almost nothing. Everybody here knows that. So anyway that's my statement relative to the subsistence issue and that unit. I'll also make a statement relative to, -- or a couple comments on, Thorne Island. I'm not a timber person. I've been told, and I hear, the quality of the timber is not that good. Thorne Island -- putting roads on Thorne Island cannot benefit anybody, I mean, it's ludicrous to say that they should be reimbursed or anybody should pay for roads on Thorne Island. Putting a log dump on Thorne Island we've probably got one already in Whale Pass, I mean, two log dumps would probably give us the highest percentage of log dumps in any five square mile area in the entire world. And I think that's kind of a little bit excess punishment and I don't think we deserve to be punished in the first place, for anything. So I don't know why they should consider that. It's, I, we've had it across the way. It's noisy. They run, I mean, you know, it would seem to me that there are all kinds of roads that have access to other harvest areas and I understand all the concerns why they move them around and that sort of thing to where they could access more economically harvest units on places other than Thorne Island. The helicopter logging, I don't understand how it works, it still has a big barge out there and I guess that's going to be there every year forever if that's how they harvest it, but maybe it's in increments of one or two years and then they wait. I'd like have that explained, if we could, so we could understand. I certainly don't understand just how they do it or how they propose it, but it just seems like -- it seems to me that Thorne Island is sacrificial land for the karst and I don't really think that's an appropriate way to manage the timber, but that's what I'm hearing. And that kind of -- I think it should be seriously reevaluated, and any logging on Thorne Island should be seriously reevaluated. That's all I have to say.

BY KATHY SMAYDA:

I can respond to a couple of your points. We did receive your letter about the water supply. We did have our hydrologist look at that. In the unit cards, in Volume 2, we noted that your domestic water supply did come from the stream. We did put a 150 foot buffer along that stream, which is a class three stream and doesn't require a TTRA buffer. We didn't know -- we weren't there and we didn't have the data on the soils instability problem that you've had subsequently. If we had some of your information on that, anything you could provide us, that would give us more information to decide that perhaps this unit doesn't make sense at all. We thought we could address the watershed -- water quality concerns from the harvest unit itself.

WFW-2



WF-3

BY WILLIAM FANNEMEL:

I didn't even mention the fact that that close of timber operation, for the period of time that it would be, would also seriously interrupt our business, and which it basically is people coming to the wilderness for peace and quiet. So, should it interrupt the business, just the noise, would also cause me to sue Louisiana Pacific. I am very serious about this. I would like that person who says that 150 yards buffer -- will he sign a guarantee that that will not damage my water supply? Will Harza? give me a corporate guarantee that that will not damage my water supply? If you will, I'm still opposed to it.

BY KATHY SMAYDA:

Well, all I'm saying is, if you can give us more information on the soils instability problem, that would give us more information and the Forest Service the information. Basically, Anne is the person who, when it comes down to individual units, are they in or are they out, she can make that call. We give her the scientific information.

BY WILLIAM FANNEMEL:

I know, but the thing that upsets me is that somebody went up there and has an opinion that a 150 yards buffer, and if you look up, I mean, stuff flows downhill, water in particular, a lot of other things do, but stuff flows downhill and that thing hangs right up to your -- up to your unit. I think that it's irresponsible for somebody to just wave off my concerns. I've got millions of dollars at stake there and the guy just has a job and he's going, "Oh gee, I'm sorry, I was wrong." I think that was a very irresponsible way for your company to the handle that, quite frankly. And I'm very upset about it. Now, if your company is so sure that this guy knows what he is talking about, then you should be prepared to stand up and say, "It won't do it, we'll sign a guarantee," but you won't do that because you're an engineering consulting company. And I've hired companies like you before to say just exactly and they say exactly that. You won't stand behind what you say, okay, that's my point.

BY KATHY SMAYDA:

Well, I'm not saying that because I'm not the hydrologist and she is not here, but she has been on the ground up there and I can give you her phone number if you'd like to talk to her more about it and give her any --

BY WILLIAM FANNEMEL:

I don't need too talk to her --

BY KATHY SMAYDA:

It's a professional judgment call, like so many are, and it's based on her 15 or 20 years in the field working in timber harvests and water quality. I can only say I'm confident that her abilities are there and she made, probably, a good judgment call. It's not to stay that -- that you might have a different situation there outside of the harvest unit boundary than we were aware of as far as soil instability or other factors that could be there.

WF-3 Refer to response to WF-2.

BY ANNE ARCHIE:  
I think that really is the point Bill, that if the information on the soils is new information, and that, coupled with the water supply, could make a difference in how that unit is viewed. So, I think that's what we're looking at is that if there's a statement from your engineers on the type of soil or even a brief description of what happened after that heavy rainstorm, then that could be coupled with the water supply and that puts a whole new slant on that unit.

Yeah, but the fact is, that even if there's a domestic water supply on that unit, it shouldn't be considered at all with the research information.

BY KATHY SMAYDA:  
The Forest Service guidelines don't come out and say anytime there's a domestic water supply you can't harvest in your area. You have -- they aren't that strong.

Look at it from our point of view.

I understand, but --

Our point is, the hydrologist, I don't believe, asked any of us what the history of how much water comes out of those springs. And the fact is, when it gets dry in some of these summers, hardly any comes out. All right. So the difference could only be a matter of a few gallons an hour and once that timber is harvested if it doesn't hold, okay -- this is not that scientific. This is not rocket science up here, this is nature. And anybody that starts trying to say differently, is really not very smart, okay. So when you take 30 acres, a 30 acre sponge, and turn it into a non sponge, all that water that that sponge holds will not hold there. And I'm saying, are the people who are involved, who will do that harvesting, are they willing to put their money and gamble? Because I can tell you, that the damages to me, when I go to court, I'll go for punitive damages. Because I'll send you guys engineering studies that will prove that, if it happens, that I was right. And then I'll get punitive damages and somebody is going to take a big hit for many millions of dollars. We're not talking about just a couple million bucks here. So, you know, it's not up to me to prove it at this stage. All I'm doing is, I'm identifying it's a very serious problem and if you folks, whoever is involved in this, are willing to take those chances -- I'll go through all the legal processes to try to prevent it from happening. And then when it happens, because I believe it will -- but I don't want it to have that happen. I would just rather have it not happen for everybody else here as well as myself, particularly my neighbors.

BY KATHY SMAYDA:

I understand your concern and if you have new, or more information, that the Forest Service could use to help make their decision, the whole thing could potentially be avoided. But based on the information they have right now, it's not clearly an area that they can just say, "Oh, we can't go in there," because they --

My point is, that's what's wrong. We're talking 30 acres right near me, and you're saying, "Maybe it will be okay. Our person says it will be okay." But you know what? That person will not sign a commitment, neither will your company, neither will the Forest Service, neither will Louisiana Pacific. Nobody will guarantee to me it won't happen. If it won't, don't you think there's 30 acres somewhere else? That's all. And I won't say anything more because I'll let other people take the floor.

**BY WILLIAM FANNEMEL:**  
I just want to make sure it's all on the record.

BY KATHY SMAYDA:  
 Actually to follow up on Bill's other question about Thorne Island and the uneven-age Management plan -- what the strategy there would be as far as harvest is to go in the first entry and take approximately 218 acres in 2-acre, approximately, patch cuts, distributed across the island in the suitable timber. That probably could all be done in one season - it's a relatively small number of acres - and I'm not saying that it would, but most likely it would be done in one year and the next re-entry would be 15 years later. So you would have a barge LTF set up and the helicopter activity during that one entry period of probably a season and then it would be 15 years before they would come back again. That's what we mean by the re-entry period. The way that we set it up was that there are enough of these two-acre grid points to keep going back each 15 years over a 150-year period.

**BY ANNE ARCHIE:**  
It has been down south.

UNIDENTIFIED SPEAKER: Yeah, I realize down there. I just got a good perspective of Prince of Wales flying over from Anchorage. Maybe it's because I've never been up 30,000 feet. It's pretty devastating is what it is and I don't see a management plan down there. I see a big clear-cut. -- reporter couldn't hear -- and that's not a rotation. When you talk about rotation on Thorne Island -- I'm trying to put this into perspective. Where has it been done around here before?



BY KATHY SMAYDA:

It hasn't. We designed it specifically for Thorne Island because we knew that it's an area that a lot of people would like to see not entered, but the Forest Service, on the other hand, has some obligation to provide some timber from somewhere. So we thought because of the unentered nature of the island, it's relatively small, helicopter distances are reasonable, even into the interior of the island, it kind of offered a good area to try something like this.

UNIDENTIFIED SPEAKER:

How much of the commitment to Louisiana Pacific is being taken off of Prince of Wales Island say for the next five years? Is there a projection percentage wise of --

BY ANNE ARCHIE:

Well I could talk about the timber sales that are coming up.

UNIDENTIFIED SPEAKER:

I'm just talking about the overall contract for L.P. It seems like the bulk of it is Prince of Wales getting hit harder than other areas. There's always talk, you know, because we've been here so long, the roads and everything is more accessible and it seems like there is a lot of timber a lot of other places that haven't been laid out I'm not sure --

BY ANNE ARCHIE:

There are timber sales planned on Revilla Island around Ketchikan and then there are, of course, Cleveland Peninsula there is a timber sale planned in that area as well in fact there are reconnaissance work going on now to look at what the timber options are. But, there are several EISs being done on Revilla Island for timber over there but there are still several timber sales here too. There's Polk Inlet.

UNIDENTIFIED SPEAKER:

Is the bulk of it still going to come from Prince of Wales?

BY ANNE ARCHIE:

I would say a half or more will still be coming off Prince of Wales Island. There are timber sales planned through the year 2003, that will be finished in the year 2003, and so we'll be releasing the last two timber sales off of -- we have this timber sale that will be on Thorne Bay, Lab Bay, we're doing central Prince of Wales. There's Lab Bay, that's right now. We're talking about Control Lake, which is another large one. Then there are two more, Tuxekan and Ratz, that we're in the very preliminary stages on. So on the northern part of the island, those are the timber sales that we're planning until the year 2004.

UNIDENTIFIED SPEAKER:

I haven't really had a chance to go over the maps -- when you were here last time -- when the karst first came up, there was like 180 units?

BY KATHY SMAYDA:

In the Lab Bay, in the original unit pool.

UNIDENTIFIED SPEAKER:  
What's that to now?

BY KATHY SMAYDA:  
I believe it's 125 or 127.

UNIDENTIFIED SPEAKER:  
Is that because they changed the status of some of that or something?

BY ANNE ARCHIE:  
Some units were dropped out of the unit pool because of they did not meet standards and guidelines in terms of soils after the contractors went out and looked at the units. There were some soils that were non-commercial land. They were high mass movement soils. Adjacency where there is a unit that was proposed, but the unit next to it had been cut and had not reached the height of small trees which we could take the timber off of the adjacent unit. So there are those kinds of concerns that dropped those units out of the unit pool.

BY KATHY SMAYDA:  
It is 125, is the full unit pool right now.

BY UNIDENTIFIED SPEAKER:  
Well, you know, they interest us to gear toward tourism. Well, with all this clear-cutting, people are just losing in coming to this island at all. I've talked to a couple of people in Ketchikan that were just leaving for back down south. One lady told me she was so disappointed to come here. She said, "I'd never come back to that island again. It's just clear-cut after clear-cut." She says, says, "Who wants to travel all these thousands of miles just to see a bunch of clear-cuts." She says, "It's ugly. It's an ugly island." Well, what can you say? It's turning out to be that way. Now they're wanting to log next to our homes, behind our homes. Is there no stopping any of this? We've all before had meetings opposed to logging around our area and it's just like meetings -- they don't have any consequence to them. They just do what they want to anyway, regardless if it's going to hurt our deer population, or our fish, or our water supplies, or any future business for tourism. It doesn't seem like it's doing any good to have these meetings in my opinion. Nothing is being done you see. Why don't they concentrate in an area that's not populated? I mean, leave this poor island alone. They've raped this island unmercifully for the people that want this for their permanent homes. They're eliminating anything at all for our future, for our children, because of the clear-cuts.

BY MARCEL LAPERRIERE:  
I'll make a statement too. I don't think I need to go up. My voice carries very well. Usually I pick up very well on a microphone. My name is Marcel LaPerriere. My residence is Ketchikan, Alaska. I own property here in Whale Pass. I'm currently building and plan to move here in the next few years. I'm concerned about subsistence because I planned, as most people in this area, I do live more of a subsistence lifestyle. So, I hate to think that land behind Whales Resort is going to be logged. It's going to hurt the deer population and, as you mentioned, a lot

MLW-4 Refer to response to GLG-3.

depends on the winters. We've had some mild winters here in the last few years, but we're due for some heavy ones and that will surely hurt the deer in all the Lab Bay area. I'm also quite concerned about the karst issue. I think that's probably one of the reasons alternative number three was selected is because any other alternative, with the exception, of number one, which is the no harvest option, will severely impact the karst which will be in violation of National Cave Resources Protection Act of 1988. So the Forest Service will get sued if any other alternative is selected, guaranteed. National Speleological Society, Tongass Cave Project, along with Sierra Club, will almost without a doubt, will file a suit if any other alternative besides one or three is selected. So that concerns me. I agree with Bill, that the karst is possibly being made a sacrificial lamb for Thorne Island. As a resident of this area, I find it appalling that the northern island is going to be hit. To me, it's akin to raping an area that hasn't been touched at all. It's basically an untouched area. Whoever said, "Geez, let's go in there," just has no concept of what it's like to have a few small areas left. You can't go anywhere on this island or around this island that hasn't been severely impacted. And I understand there is a 10-year commitment still on the Ketchikan Pulp contract, and I understand the timber is getting harder and harder to find, but I personally would certainly like to see the Lab Bay area alternative number one selected, no more harvesting in the Lab Bay area, period. Thank you.

MLW-4

BY ANNE ARCHIE:

I guess I'd like to make a statement about that myself. Alternative three was not selected because we were afraid we'd be sued. I guess I'm not supposed to take personal offense at this --

BY MARCEL LAPERRIERE:

I'm not meaning to be offensive to you. I'm sorry.

BY ANNE ARCHIE:

-- but you know my commitment to karst --

BY MARCEL LAPERRIERE:

Yes. I do and I appreciate that. That's great.

BY ANNE ARCHIE:

-- and I made the selection for that alternative because I was committed to karst. And I just want that to be known, that I don't make -- select alternatives because I'm afraid of a lawsuit. And I don't mean an affront to you Bill.

BY MARCEL LAPERRIERE:

The way this has been tailored by Harza, I realize this isn't even the Forest Service-- the way this has been tailored by Harza, which Harza has been very involved in the karst vulnerability since day one, it appears to me, that Harza tailored this whole thing around alternative number three, which gave you guys no option but to choose number three.

BY ANNE ARCHIE:

No. Absolutely not. Absolutely not.

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Page 10



## Responses to Comments at Whale Pass Hearing

MLW-5

Alternative 1 excludes Thorne Island from harvest. The Decision Maker may choose to exclude Thorne Island from any of the action alternatives.

BY MARCEL LAPERRIERE:

There should have been a sixth alternative that totally excluded Thorne Island and that wasn't in any of the alternatives. It was not excluded.

MLW-5

BY KATHY SMAYDA:

One thing to remember is that the volume -- the target volume for the project -- is set, and it's fixed, and it's not something that Anne has a choice over. And that puts some constraints on the design of alternatives. We started with a unit pool of about 180 units and then things were eliminated: TTRA streams, areas being eliminated because the timber didn't turn out to be as good as we believed it was, and various reasons that they were eliminated. But the volume, which was fixed basically outside of this arena because of the long term contract and so on, that stayed the same. And so, you know, it's hard to meet all the issue concerns with any one alternative. Even individual alternatives don't. Previously we had alternatives where Thorne Island wasn't included and as we lost additional units through proportionality concerns, for too much harvest of high volume, and so on, we couldn't even approach our target volume. If you look at the -- in Chapter 2 there's a summary table of all the alternatives. Alt 2 is the only one that meets or exceeds the target volume. All the others, instead of 85 million, are actually in the 60's. So we're already down below the target, even with Thorne Island included. But also keep in mind that this Alternative 3 has not been selected. It's preferred right now by the Forest Service. It's being proposed as their -- the one they think is best, but there still is fine-tuning that can be done and that's where your comments on individual units, specific areas like Thorne Island, roads, road closures, road openings, that type of information, could still be factored into the design of the final alternative.

BY MARCEL LAPERRIERE:

First off, I guess I'd like to follow up a little bit. I apologize to Anne for making the rash statement that you were responsible because I understand you're with the karst and so I'd like to make that -- Anne has been great with the karst problem, but again, as an individual, I truly believe the only alternative that can responsibly be selected, by any parties, is number one. It doesn't lose money to the U.S. taxpayers and all the other alternatives do. It protects the tourist industry, which is the fastest growing industry. It protects the fishing industry -- helps protect the fishing industry, which is very important to this part of the island and all the Lab Bay area, and protects us individuals -- our rights to some wilderness. The American people own the Tongass National Forest, not Louisiana Pacific, and I think that needs to be taken into consideration. I think I've said enough.

BY WILLIAM FANNEMEL:

May I ask one question? Where did the term harvest units come from, because the implication is that this is a crop? I know that the Forest Service comes under, I think, the Department of Agriculture, and I wonder if that may be one of the reasons why we have some difficulties in these areas, because this is not a crop and I'm just -- I think the point was made very well. It's not a crop, neither are the fish, neither are the -- we don't harvest fish and there are some misconceptions, I believe, in Alaska, in approach to certain things with what they call

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Page 11

sustainable yield. It means you can kill everything down to a point where you think it will come back. This is nature. Nature is different from planting corn and things like that. And is it possible, that when you finally do this, you could change the term anyway and not call it a harvest unit?

BY ANNE ARCHIE:

What would you call it, Bill?

BY WILLIAM FANNEMEL:

Just call it a clear-cut. It's not a crop that's harvested. And in the same vein, it seems like that this as a road that, I mean, even if it's wrong, whatever it is, there's this timber contract that was signed 40-some-odd years ago, whether it's right or wrong, it's going to happen. And I'm just wondering, where is the stewardship that looks at this and says maybe Alternative 1 shouldn't happen, you know. I mean, is there some, you know, I mean, I don't understand exactly how the management of the Forest Service and of the forest, supposedly for the benefit, I guess, for the greater benefit of all the people and certainly the people that live in the wilderness area. And the only thing that I've seen that says that it benefits is the creation of a hundred-and-some-odd jobs, new jobs, I think, this is going to create here. But, anyway, I just wanted to make that comment because I think it's a total misnomer to say we're harvesting trees. This isn't a tree farm. It's a national forest.

UNIDENTIFIED SPEAKER:

Are they cutting trees that have been cut before somewhere?

BY ANNE ARCHIE:

Not yet, no. The second growth that we've looked at has not quite reached a point where it would be good to cut it. There are some that, I mean, I was amazed, I think you were at the meeting at Craig, that Owen Graham from KPC brought in a tree that was like this deep in age, it was 23 years old. This place grows trees like -- well, we all know that, but the trees that are -- when you harvest second growth, you're kind of looking at the point where the tree is growing, and growing, and then it kind of slows down its growth, and that's the point where you cut them, because they stop putting on that large amount of growth. And the second growth on the island hasn't reached that point yet. There are some trees down near Thorne Bay and at Gravelly Creek recreation area, if you walk in there, there's some trees that are like this, but they are still growing. They are about 80 years old. We're on a 100-year rotation, so they've got a little more time to put on some weight and then they're ready to be harvested.

BY MARCEL LAPERRIERE:

What I think that needs to be pointed out, as Jerry Sharrard pointed out in Craig, that lumber is only going to be good for pulp. It's not going to be good for lumber. It's not going to be lumber quality. You are not going to replace a 400-year-old tree with a 100-year-old rotation. It's going to be pulpwood only.

BY ANNE ARCHIE:

There can be some sawlog made of that too.

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**BY CHARLEY STREULI:**  
I think if you look at other structural material you'll see that has pretty wide growth to it, will not meet the quality-type wood that Jerry is looking for for that type of product.

It's not going to make violins. It's not going to make guitars or pianos and it won't make fine wood for furniture and boats. So that is -- that won't be here in the amount that it was in the past, but it will make lumber and it will make pulp.

It's interesting to hear how much the Forest Service or the long range plan is -- maybe a different way to look at it is, how much old growth is going to be left on this island?

BY ANNE ARCHIE:  
There is -- I think that's outlined in the wildlife section in Chapter 3. If you look in the wildlife, you'll see some tables. They'll outline -- they'll give you that answer for each alternative.

**SUPPOSING THEY GET TO THAT POINT, WHENEVER THAT MIGHT BE, AND THAT'S GOING TO BE IT?**

Well, this will show what it is after Lab Bay is finished.

**We actually took it to --**

Is there actual studies which would basically project our deer with the percentage of old growth we need? I understand what's going to happen with the deer population over the long period because we don't have great deer now, and it's just a sign, and we'll lose a lot and it will all be relevant to how much old growth is left. I guess, what I'm looking for is, what that figure is that we can be guaranteed that's going to be left on this island. And then it seems like there will be the big pool of trees left that the Forest Service would have to work with. I'm not sure if I'm putting that right exactly. Like I said, I'm basically curious. It seems like I hear talk about karst and areas that you kind of thought were protected.

(Stopped writing to turn the tape over.)

That's the legislative process. We are out of that, and actually the only -- I as a citizen can work within that process, but Charley and me, as an agency, cannot. So, if you don't like the landless native stuff -- I'm not being facetious, don't tell me. Tell the man who's got the bill. So it's really the people are the only ones who can stop that, or make it go.



BY MARCEL LAPERRIERE:

I was under the impression that some things, like Salmon Bay, a few years back, sales were kept out of that area. Now it's gone around in a circle again and they are back trying to chip away at the place.

BY ANNE ARCHIE:

There are the proposals to do that in legislation, going through the Senate and the House.

BY MARCEL LAPERRIERE:

Well, nothing is in stone. You got to keep right on top of it.

BY ANNE ARCHIE:

For your information too, the Forest Service has come out -- Secretary Glickman has come out -- the Clinton administration has spoken in opposition of that Senate Bill 1054, and since the Forest Service is part of the administration, then that's where our position is too, is in opposition to that.

BY MARCEL LAPERRIERE:

It's unbelievable amount of windfall and stuff in the north end of the island, basically millions of dollars of timber that doesn't seem to be addressed in the way it should be, I mean, that should be something that somebody in the Forest Service should be right on top of and make sure that's put up for sale and utilized.

BY CHARLEY STREULI:

As we've talked, there is a lot of salvage opportunities and we prioritized those opportunities and we're -- that is, some of it on the north end of island is the lower priority like we talked about. The hemlock sawfly on Heceta Island and Tuxekan, and those kinds of things. That's where we're putting our efforts right now. It may take time, but I see that we'll get to this end of the island to look at those salvage opportunities for small business and those types of sales.

UNIDENTIFIED SPEAKER:

That's why things like Thorne Island, all this energy being put into logging Thorne Island, could be put in to finding these salvages -- you'll find more wood than you find on Thorne Island, and better quality. And I think you're probably --

BY WILLIAM FANNEMEL:

When you have a buffer along the stream or these kinds of places and it's 100 feet or a 150 feet and then you check and you find out, "Oops. Gee. We cut 50, or a 100, of the 150 feet." What sort of punitive measures are taken towards the timber company if any?

BY CHARLEY STREULI:

Toward KPC?

BY WILLIAM FANNEMEL:

Or whatever, somebody cuts it. You can't put it back.

BY CHARLEY STREULI:

Anytime there's timber cut that's not designated for cutting under a timber sale, we may be in error. The Forest Service may have mismeasured the buffer and then it may be designated mistakenly. Nothing would happen. But if it was undesignated for cutting and it was cut, it's turned over to law enforcement and it's a criminal penalty.

BY WILLIAM FANNEMEL:

I didn't know. I was just curious.

BY UNIDENTIFIED SPEAKER:

Charley, am I not wrong though that they do not forfeit that wood? And they also, if they are fined, write that off as a tax loss?

BY CHARLEY STREULI:

I don't know what the accounting would be, but if the timber has been harvested, they would pay triple stumpage on it. If we found it prior to it being harvested, it would be left there.

BY WILLIAM FANNEMEL:

But when you said it was criminal, it's a misdemeanor?

BY ANNE ARCHIE:

If it's in a Tongass Timber Reform Act buffer, it could be a felony. It depends on the, I don't know that much about how law enforcement would look at it. I think, it would depend on the intensity of it, the magnitude of it, any other extenuating circumstances.

BY CHARLEY STREULI:

If it was negligence or --

BY ANNE ARCHIE:

If it was negligence, that's one thing, but if it was actually planned and then carried out maybe in collusion with other things -- but in other places where this has happened it can be a felony.

BY CHARLEY STREULI:

We've taken measures entirely to measure the buffers correctly on the ground. We've gone from slope distance measure to horizontal distance measure, and we actually have the person that puts them in -- has to sign a certification that it meets that distance. So there is accountability there -- personal accountability.

UNIDENTIFIED SPEAKER:

I'd like to know what kind of insects are killing the trees along the road. In particular, the hemlock up here along the roads.

BY KATHY SMAIDA: Hemlock canker. A disease that they don't seem to know a lot about. It appears to be spread by dust and that's why you see it along roads in particular. Probably fungal or something of that nature and appears to be carried by dust. We've been here since '92. It has definitely expanded significantly back from the road.

That's a whole new twist on the research that was being done. It used to be the dust along the roads -- there were small amounts of studies, but now this new information has kind of thrown them for a loop here -- gathering of new information to see what's happening. We don't know.

Does that mean you are going to pave all the logging roads now?

No joke, in the other areas where they have not the same disease, but similar diseases that seem to be transmitted similarly, that is the solution. It's been done in Oregon and some other areas, so that's certainly a concept.

**YOU GUYS** have been water barring all the spurs, I thought maybe that was why.

It's the dust. We think it's the dust.

## Was this happening before they started water barring?

There is some discussion of that in the timber section here and I believe the Forest Service experts in Juneau know the most about that, but it's definitely here. There is a big stretch of it up there, it's very obvious.

I'd like to know if the proposed roads that are going in, did you plan to water bar all of them as well?

There is a map. I believe it's also in the environmental impact statement that shows the proposed road closures. It's not only proposed for the new roads that would be built, but proposed for some of the existing roads. And so we are real interested in your comments on whether you think that that is appropriate to close those roads where they are proposed or not. Whether you think those roads shouldn't be closed or you want more of them closed. So those are the kinds of comments we're really soliciting from people, really good specific issues you have that you could tell us what you want or don't want on some specific areas. We can really work with that. If you



**WWF-6** Showing the location of individual residences is not possible due to the scale of the maps. The effects on communities are discussed in the subsistence section of the EIS.

9-WFW-6

BY WILLIAM FANNEMEL:

I'd just like the make one final comment and that is that it seems that you've -- in looking at all these factors that you take into consideration and things, but it seems obvious just to me, from the people I've talked to and listening here tonight, that one of the things that you, if you haven't -- it seems that you haven't taken enough consideration into the human factor of how these things impact everybody's way of life, lifestyle, the immediate things. There is a lot of intangible things that are -- I'm talking about -- not the overall timber plan. I'm talking specific things that everybody has concerns about -- what's in their very backyard. And you can analyze it and you come up with analytical reasons why this -- But it's something you can't put quite in feet and inches, and in elevations, and things. And I think it's something you really need to take a hard look at -- every single house and every single person that is living in this area and the things that are near. I don't know what the definition of near is, but the definition of near is more than a few hundred yards. I think if you live out here, your near neighbor is a mile away in many cases, or two or three miles, so near has a much different meaning to us that live out here than a person that lives in a house in a city, or Ketchikan, or somewhere else. It's a quality of life. It's a thing that you really have to look at very much more, I think, than you have, because I think are some things that have been -- not just the ones that affect me, but that affect a lot of other people here, that haven't been that factored, whatever you want to call it. I don't know the right word for it, but it has to be considered. I think it has to be looked at a lot more harder. I would think that one of these maps would have the location of every dwelling of every person. I don't think I saw any. I saw communities, but I don't see people. That's what you're dealing with, the people. All of us that are impacted are people. We live in these little houses, in these places, in this community. Whatever happens impacts us, but none of those maps had anybody's house on the it, or anybody's little village, or any of those things. I would like to have seen that. I think if you did that, you might -- and you put yourself in that position, when you look at that -- all of those of you who that

evaluate it and make your recommendations to Anne, especially the folks at Harza. Harza -- there's more than just engineering here. There's more than just harvest units here. All of those things are what -- that's what an environmental impact is. It affects the environment, which is the quality of life. I appreciate all of it, but we're asking you to take a real hard look at that. Don't just say, "Well, it's a hundred feet here or two hundred there." Those are very -- it's not -- you got to look at it from that standpoint.

BY MICHAEL GALGINAITIS:

I think that's a valid point and I can address that from my perspective. We were mainly concerned with the subsistence issue, but also contributed to some of the other social-economic considerations. I think one thing that we have kept in mind constantly is that people are concerned about the quality of life and that's why they live here. Another constraint we have though is that everything, practically everything, is a compromise, so that many of the decisions that we make that appear in the Draft Environmental Impact Statement may appear to be, you know, stark black and white decisions and actually was the result of a much more complex process where there's a give and take. You have to decide what unit to include, what unit to exclude, what unit do you modify for certain considerations. I think what I'm hearing is that you don't see enough of that reflected in the Draft Environmental Impact Statement and we can do a better job of communicating that, I think. And you're comment. I think, is also partially correct. We do have to do a better job. It is very difficult to measure and I think that's part of problem. When you are comparing apples and oranges, and you have a very good measure for apples, and a very bad measure for oranges, apples is usually going to come out better in a final analysis because people know how to deal with that. So we're trying to deal with those factors, but, you know, they're fuzzier. They're hard to get a hold of. We will try to do it better, but we understand the problem there too.

BY WILLIAM FANNEMEL:

I think then maybe you can just tell us what happens now. What are the next steps? I think you mentioned some of them earlier.

BY ANNE ARCHIE:

What we're hoping is that you will all read more of the document. At this point in time, the comment period ends on September 18th, for your written comments. So, if you can get those comments to us by that time. I really appreciate, I think Kathy would too, trying to -- if you can be real specific, you know, "538-210 is a lousy unit get it out of there." That's the kind of -- or, "this particular road I want closed and I want it closed at this area," or "I want it open". Those are the kinds of things that are good for us to work with. So the next step is for you to get your comments in to us in writing, if you wish to do that. Make comments tonight, but if you want to add some more specific things, get those in to us. The draft -- then we'll take those comments and work with the contractors, and work with Harza, and we will then again look at the alternative that we've proposed, and look at the comments, and what people say about that alternative, and we'll make changes in that alternative. Once that is done, we will -- there will be a final Environmental Impact Statement that will be sent out and that will have the Record of Decision. It will show the alternative that was decided upon and all the information about that alternative. There will be a Record of Decision that shows what the decisions were made about how that alternative will be

implemented. Then there is an appeal period for 45 days. So, if you don't like that alternative, you can appeal it. You can write the Forest Supervisor an appeal and the Forest Service has a certain amount of time that we can respond to your appeal. Then, if we have no appeals that cause us to change anything else -- that we found that maybe we didn't do enough work on the alternative and we changed that, and if we work with the appellants and get that all settled out, then we implement the alternative.

**BY UNIDENTIFIED SPEAKER:**

-- where can you get a copy of that -- the draft -- I'd like to have one.

**BY KATHY SMAYDA:**

We'll get your names and send those out -- we brought extra copies of the summary with us, which includes the map and the small document that summarizes the DEIS, but I don't have any more copies of the full document. We have given them all away.

**BY MICHAEL GALGINAITIS:**

I have at least one I think we can give away here.

**BY ANNE ARCHIE:**

Donna Farley needs one and Sharon Hillis. I'll copy those down and get some more.

**BY MICHAEL GALGINAITIS:**

Here's one. I don't have the map that came with that, but the map is in the summary.

**BY ANNE ARCHIE:**

We'll send one up to her. If you were the on the mailing list -- if you had made comments initially to the project, then you get put on mailing lists and you start getting this stuff. We've got your name and address now, so if you wish to receive a copy of the final that's -- we can do that.

**BY WILLIAM FANNEMEL:**

One other question -- it seems in talking to a couple of people that they just -- some people just found out about this meeting and I know it's in the draft EIS. I was just wondering what process did you use or do you use to notify people. Is it published in the Island News?

**BY ANNE ARCHIE:**

Published in the Island News, published in the Ketchikan Daily News. I think we sent a letter to Jenny -- is that who we coordinated with? Jenny pretty well gets around the community too.

**BY MICHAEL GALGINAITIS:**

Most communities -- besides the formal contact, we try to call at least some of the people we've been in contact with before so that they can help spread the word because, as you know, in many of these communities it's difficult to get in touch with a lot of people.



BY WILLIAM FANNEMEL:

I haven't read the Ketchikan paper in weeks.

BY MIKE FARLEY:

Didn't the Forest Service submit a study of the deer habitat when the subsistence board decided that we were going to have a doe hunt here?

I know how the whole process ended up. I thought the Forest Service was -- basically submitted stuff that was against it.

BY ANNE ARCHIE:

I'm sure the Forest Service made comments on it because we were solicited for comments. I really don't know what those comments were.

BY UNIDENTIFIED SPEAKER:

I was curious. I don't have a copy of the meeting or anything. I'd heard a lot about it.

BY ANNE ARCHIE:

People have been calling my office and I've been sending them over to Fish and Wildlife Service and the Regional Subsistence Board.

BY UNIDENTIFIED SPEAKER:

I go over and talk to the State in Ketchikan and then I go down and talk to the rangers -- it's interesting.

BY ANNE ARCHIE:

Yeah. There's a lot of controversy on that decision. Well, anything else on --

SHARON HILLIS:

I have a question. Volume class 4 and 5 and volume class 6 and 7 -- explain which is which. Which has the high timber?

BY CHARLEY STREULI:

Six and 7.

BY ANNE ARCHIE:

Thank you very much for coming this evening. I hope to hear from you.

END OF HEARING

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Page 20



LAB BAY TIMBER SALES EIS ANILCA HEARING AT KLA WOCK  
8/19/95

2 pm- 4 pm

No attendees.

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LAB BAY TIMBER SALES EIS ANILCA HEARING AT CRAIG  
8/19/95

5:30 pm - 7:30 pm

No formal testimony.

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LAB BAY TIMBER SALE EIS ANILCA HEARING AT COFFMAN COVE

08/21/95

BY ANNE ARCHIE:

Well, I'm Ann Archie. I'm the District Ranger at Thorne Bay. I'd like to welcome you to the Lab Bay meeting to hear your issues, questions, and discussions about the Lab Bay timber sale. I'd like to introduce who's here, the folks who have come to help us with the EIS and are going to be taking your questions and information you have. Why don't we just introduce ourselves?

BY KATHY SMAYDA:

I'm Kathy Smayda and I work for a company called Harza Northwest. We are contractors who have been helping to put together the Draft EIS. I'm the team leader of the resource people and the logging engineers that worked on the EIS.

BY MICHAEL GALGINAITIS:

My name is Mike Galginaitis. I work for a company called Impact Assessment. I'm out of Anchorage and we're a subcontractor to Harza on this. Our primary responsibility was to look at the effects of the proposed actions on subsistence resources and then the patterns of subsistence use by the people who use those resources. Then ultimately prepare the formal statement that is required under the Alaska National Interest Land Conservation Act. If these resources are going to be affected they have to make a decision that they've taken as much consideration for those resources into account as possible given the greater good or for the best benefit of the National Forest. Basically, what it means is that if you look at what's going to happen in the EIS, they've taken as many steps and they could to minimize those impacts upon subsistence resources as possible.

BY KATHY SMAYDA:

Robin Johnson is here to help record tonight. She is with Mike's company.

BY CHARLEY STREULI:

I'm Charley Streuli from Thorne Bay. I work for Anne. I'm the Environmental Coordinator and review the documents.

BY ANNE ARCHIE:

Mike, if you'd like to go ahead.

BY MICHAEL GALGINAITIS:

I'd sort of like to give a more formal statement of starting this because this is going to be a formal hearing under ANILCA and they like it if you go through a formal statement like this. So, today is August 21st about 7:24 p.m. We're in Coffman Cove. The primary reason for being here is we are going to conduct a formal subsistence hearing under Section 810 of the Alaska National Interest Land Conservation Act for the Lab Bay Draft EIS, which is part of the Ketchikan Pulp Company Long-Term Timber Sale Contract. The hearing is required by law because our analysis indicates that the proposed action may significantly restrict subsistence

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Page 1

uses. This is your chance to provide us with additional information and to help shape the preferred alternative for final action. Robin Johnson, who you have been introduced to, will be recording any formal testimony and we'll also be taking any written comments that you may have or want to submit now. You can also submit comments any time later. The comment period is now through September 30th. Since this subsistence hearing is a formal legal requirement, we would prefer to restrict testimony at the beginning to subsistence issues. Once everyone who wishes to make comments or give testimony related to subsistence issues has spoken, we will close the formal subsistence hearing and begin a more general hearing where we will entertain testimony or comments on any part of the Draft Environmental Impact Statement you want to talk about. Of course, if people make subsistence comments at this time, you know, after we close the formal hearing, we will still consider them as part of the formal subsistence hearing. Before beginning the formal hearing, I would like to make sure that, you know, you understand what the process is about for this meeting and if you have any general questions about how the Draft EIS study was conducted or what the results are, we're willing to take a short break here, you know, to have a brief question and answer period. We're here mainly to listen to your comments and testimony, so we can't take a whole lot of time, but if there is any question you think you might have that would really clarify things or you aren't sure of what is said in the document or how it was done that would help you with your comments, we're willing to hear those at this time. There aren't any questions I guess. Well, I think during the formal part, we would like people to sit here so the microphone picks up their voice a little better that gives us a back up for Robin's recording in case she hears names, places that she doesn't quite get or if there is some uncertainty later we can clear that up. And I guess that's about it. We've gone over the attendance sheet. I think everybody has signed that. I'd like to thank you for coming. I apologize for the lengthy preface, but it is something we have to go through. Now, is there anybody who would like to make a comment for the record on subsistence issues? Well, general comments?

#### NO ONE OFFERS ANY SUBSISTENCE-SPECIFIC OR GENERAL COMMENTS

BY MICHAEL GALGINAITIS:

I'll close the hearing then, since there are no comments, at about 7:28.

END OF HEARING



SBW-1 Your comment in support of the proposed harvest and its potential benefits to subsistence users is noted.

LAB BAY TIMBER SALE EIS ANILCA HEARING AT WRANGELL  
08/22/95

BY MICHAEL GALGINAITIS:  
The primary reason we're here is to conduct a formal subsistence hearing under Section 810 of the Alaska National Interest Lands Conservation Act for the Lab Bay Draft Environmental Impact Statement which is part of the Ketchikan Pulp Company's long-term timber sale contract. The hearing is required by law because our analysis indicates that the proposed action may significantly restrict subsistence uses. This is your chance to provide us with additional information and to help shape the preferred alternative for final action. Robin Johnson will be recording any formal testimony and we'll also be taking any written comments that you may have. I guess, right now, what I'd like to ask if there is anyone who would like to make a formal statement about subsistence in the Lab Bay Project area, about how they think the alternatives proposed may affect subsistence use in the Lab Bay area.

BY SCOTT BROCK:  
I don't feel that the proposal will affect the subsistence at all. My name is Scott Brock with KPC and I feel to some degree, that it will benefit subsistence, hunters, fishermen and whatnot by opening up new roads, accessing new timber, new areas.

SBW-1

BY MICHAEL GALGINAITIS:  
Do you have any questions? Okay. Is there anybody else that would like to make a statement?  
I guess, we'll close the hearing. I should say this is the ANILCA hearing that is in Wrangell, it's August 22nd, it's about 7:32 right now, we must have started about 7:30, and, I guess, now we'll close the hearing and go on and see if there is any other discussion that people might want to have about other issues, questions they might have.

## Responses to Comments at Ketchikan Hearing

CLK-1

Your comment supporting Alternative 3 with the inclusion of the Thorne Island Uneven-aged Management Plan was considered along with others and is reflected in Alternative 6. This alternative was created to more fully address public concerns for subsistence, wildlife and visuals, while continuing to protect karst resources. Also see AK-18.

LAB BAY TIMBER SALE EIS PUBLIC HEARING AT KETCHIKAN  
08/23/95

BY ANNE ARCHIE:

Tonight we're here to listen to your concerns and comments about the timber sale and joint discussions about what you think about the timber sale. We have people who helped put together the EIS and I'm going to turn the meeting over to them to start the process of getting your comments together and opening up the discussion on concerns and issues or any questions you may have about the timber sale. I'd like to introduce Kathy Smayda. She is employed by Harza. She is the interdisciplinary team leader for the team of specialists that put together the timber sale for us.

BY KATHY SMAYDA:

Thanks, Anne. I'll just introduce the other people we have here tonight with us. Charley Streuli also from Thorne Bay Ranger District, he's the Environmental Coordinator there. Mike Galginatis, sitting over there, is from Impact Assessment in Anchorage and he is the subsistence specialist that helped put together that section of the EIS. Robin Johnson will be helping us record tonight. What we'd like to do is start out with any formal comments that anyone has. I know that's a little bit tough sometimes, to have to come up and speak into the microphone, but that's the best way for us to record your concerns. After that, when we get through with formal comments, then we'd be happy to just open this up for questions and answers, talk about the project, anything else you'd like to bring up related to the project. So, at this time, I guess, I'm going to ask if there is anybody that would like to make a formal statement. I'd ask you to come on up here and introduce yourself so we have your name correctly on the record and just go ahead and tell us what your comments are on the Draft EIS.

BY CONNIE LAPERRIERE:

My name is Connie LaPerriere. I'm a member of the Glacier Grotto, which will kind of tell you right off the bat what I'm kind of interested in. I also have a piece of property in Whale Pass. I guess as far as formal comments here, the first thing I'd like to do is, as I went through this, the whole Lab Bay mass of documents, I guess I just want to compliment the Forest Service for taking an incredible range of issues and terribly difficult things to decide and trying to do something with it in presenting alternatives. Sometimes I realize how hard that is with so many complex issues and I just wanted to thank the Forest Service for their attempt to try to incorporate everyone's ideas into it. As far as the impact statement itself, I guess, I'd like to present my opinions on it, kind of like a Christmas list is how I would liken it here. If I could get whatever I wanted, I would want Alternative 1, but as I go down my Christmas list then the next alternative, of course, I would look at is Alternative 3. The reason I'm looking at that is because of the karst vulnerability studies that have taken place on that. I think the thing about the karst vulnerability studies is really important for a lot of people to remember is that, although caves are protected by the Cave Resources Protection Act, it's really hard to go through an area and make sure it's all covered. I think by doing the karst as systems and things like that that we're less likely to miss areas where there may be caves and cave systems and protect the resource better. I think also that it protects the areas and the way the caves interact with the timber in the area and the wildlife. So, I think that that's a really important thing to do. On my Christmas list,

CLK-1

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Page 1

## Responses to Comments at Ketchikan Hearing

### KNK-2

A reasonable range of alternatives is proposed in the Final EIS, as required by the National Environmental Policy Act (NEPA), ranging from approximately 40 MMBF to 102 MMBF.

### CLK-1

if I could incorporate with that, being someone who has property in Whale Pass, if on that alternative, I could throw in the Thorne Island Alternative and put in the one, the Thorne Island the way it's presented in Alternative #4. I think that Alternative 3 would make me much happier. Thorne Island seems like a very small island to have so much impact by road. It just seems like that road has to have a major impact on a lot of the wildlife on that island. So, I guess, if mixing and matching can be done, that's how I would look at it. I guess that's all I have to say in a nutshell here. Thank you.

BY KATHY SMAYDA:

Thank you for your time.

BY KENT NICHOLSON:

My name is Kent Nicholson. I live here in Ketchikan. I own property in Thorne Bay. The Lab Bay EIS and project area is very important to the timber industry. It's part of Ketchikan Pulp Company's long-term sale area. By putting up as much volume as is possible in the various alternatives it would help several items, other operators, it will help the independent sale programs, it will help small businesses, it will help value-added businesses. I really don't have a particular alternative. I understand Alternative 3 is the Forest Service preferred alternative. I do have a couple questions about the amount of volume in each alternative. I see that the goal is to get 85 million feet and none of the three alternatives -- Alternative 3, 4, and 5, none of them come close to 85 million feet and so that's one concern that I do have. That's about all I have. Thank you.

### KNK-2

BY KATHY SMAYDA:

Thank you. Any others who would like to make formal comments at this time?

BY JAMES LLANOS:

Good evening. James Llanos, Ketchikan resident. I wanted to comment that I don't think Lab Bay goes far enough. I've been watching how the Forest Service has been operating over a number of years. They've been making little pricks across the landscape here and there and everywhere in between. Much like you would take a cow and stab it with a little knife here and stab it with a little knife there and bleed it a little bit every day. Eventually that cow is going to die, but if you take that cow and you just put a big gash in its side somewhere, it has a good chance it will come back and live. It won't be happy, but it will live. Lab Bay doesn't go far enough at all. You need to change the policy of bleeding. In my opinion, we need to go and hit that as hard as we can, one time, and not come back for a long time, because nature seems to heal better from disasters than it does from mankind. We need to go in and act like we're that big forest fire, going in and wiping out all those trees in our way, because nature will get out of it's way. All the animals will get out of the way. They'll see this big fire coming, the fire called man, and they'll get out of the way. They'll go somewhere else. And when the time is right, they'll come back. So, I think we need to hit it hard and don't come back ten years from now, five years from now. Take the max alternative and go with it, if you can. Cut as concentrated a spot as you can. Whistle it, just like the native corporations do, because you won't be back for 150, 200 years. And in that time, nature will heal itself, but if we go in and we're nipping here and there, we're there the whole 125 years. The animals don't like that. So, let's just get in, get it

### JLK-3

### JLK-3

As discussed in the Purpose and Need for Action in Chapter 1, actions proposed in the Lab Bay Project EIS would help meet the terms of the KPC Long-Term Sale Contract by making approximately 85 MMBF of timber available for harvest. This action would contribute to a current 3-year timber supply requirement of the KPC Contract. It would also move the Project Area toward the desired future condition as described in the TLMP (1979, as amended) and would be consistent with the TLMP Draft Revision (1991a). The maximum harvest alternative, Alternative 2, is one of six that the Decision Maker may select from or modify for the Record of Decision.



## Responses to Comments at Ketchikan Hearing

JLK-3

over with, and get back out. It's a given that we're going to cut it. There's no stopping that unless we can export all these people and get them out of here. It's a fact that it's going to get cut. I can acknowledge that.

The other problem I have with what we're doing is Prince of Wales Island has been compared to a tree farm. If you look back in the early 1900's, we had a lot of farms across the midwest and there was things that we were doing. We weren't putting stuff back into the land as we took them out. As we take all these trees out of the ground that normally will die, fall down, and something else will grow and use it. We are removing part of the natural fertilizer and nutrient system that nature provides and we're not putting anything back. I'd like to see somehow, even if it's our garbage, if we dump our garbage out there and let it rot, it's at least putting something back into the land that we are going to take out and it will never be there. You can only grow a crop without putting fertilizer in so many times before it don't grow crops anymore. And you're talking about one big tree that eats a lot. And once it's gone -- and it doesn't fall back down to feed all the other things and all, you know, everybody is worried about the critters, I'm worried about just the tree coming back. There's only so many times you can harvest in one spot on a farm before that spot of land is dead, unless you do what? You put manure in there, put something back. You've got to rebuild the soil and I don't see anything happening where we're rebuilding the soil. We're planting trees, that's great. We're planting the next crop, but we're not putting anything there to replenish the natural nutrient system. That's all I have.

JLK-4

BY KATHY SMAYDA:

Thank you. Would anyone else like to make a statement, comments on the project? We can wait. We've waited a long time at several of these meetings. Well, I think if there's no one else that would like to make a statement at this time, what we can do is close the formal part of the hearing. If anyone changes their mind, please let me know because we can do that. But if you do have questions, informal discussion, things you'd like to ask myself, as the person who was in charge of putting the Draft EIS together, or Anne and Charley, people from the District who know that area. We can look at maps. We can walk you through the things that we did to plan the different alternatives. Anyone else like to make a statement? All right. Thank you very much.

BY HANK NEWHOUSE:

I'd like to go back on record and make a recommendation. My name is Hank Newhouse. I reside here in Ketchikan. I've resided here for the last five years. What I'd like to do is to go on record as favoring Alternative 3 with the exception of Thorne Island and in that for Thorne Island I'd like to suggest in favor the harvest plan that's presented in Alternative 4. The reason is that that would be a better mix for subsistence users, particularly the Whale Pass users in that, if you road Thorne Island, in that there's pine marten that reside on that island and I think they are about one trapping season after the roads are open and they are available the pine marten will be gone. By not having roads there it makes it less accessible to trappers and you'd maintain a viable population of pine marten that would be available for the subsistence users over time.

HNK-5

JLK-4 During timber harvest, considerable unmerchantable woody material (tops, limbs, smaller-than-merchantable size trees and defective trees) is left within each harvest unit. Most of the harvested units on northern Prince of Wales Island are extremely difficult to walk through because of the abundance of this 'slash' left behind. Furthermore, numerous standing snags, individual green trees, and clumps of trees will be left for wildlife habitat in the proposed Lab Bay units. All of this slash and the standing trees contribute to the recycling of nutrients important for maintaining soil productivity over the long term.

HNK-5

Your comment supporting Alternative 3 with the inclusion of the Thorne Island Uneven-aged Management Plan was considered along with others and is reflected in Alternative 6 of the Final EIS.

LAB BAY TIMBER SALE EIS ANICLA HEARING AT PORT PROTECTION  
09/22/95

BY CHARLEY STREULI:

I've been in Thorne Bay a little over six years and in Alaska a little over ten years. And while I've been at Thorne Bay, I've done the recreational lands job, and the timber management job, and now environmental coordinator job is working for Anne reviewing NEPA documents and Freedom of Information Act and things like that. We were here -- let me introduce Kathy Smayda from Harza Northwest. Harza is the contractor that's writing the EIS for the Forest Service. We were here I think September 17th -- I'm sorry, August 17th. At that time it was decided by Anne Archie not to have a formal subsistence hearing. And there was also a request made to extend the comment period, and since that time, the comment period has been extended to September 30th. And we're back today to do the formal subsistence hearing.

BY KATHY SMAYDA:

Okay. Well, I'll take it from here and first I'll just review the procedure that we want to follow and then we can have a chance to discuss whether we need to modify that at all to get what you'd like to do. The primary purpose is to conduct a formal subsistence hearing, for the Section 810 of ANILCA, the Alaska National Interest Lands Conservation Act. This hearing is necessary because our analysis for the Lab Bay timber sale project shows that the proposed action could have a significant effect on subsistence and could potentially lead to restrictions on subsistence use in the area. This is an opportunity for you to provide comments and testimony, either formal or informal, on the proposed project and we will consider those comments in our design of the final alternative for the timber sale. You also, of course, can provide written comments and, as Charley said, the comment period is over September 30th. You can provide both kinds of comments too if you want to. What we'd like to do is give everybody who wants to provide formal testimony an opportunity. I'll ask you to come up and sit by the microphone here and state your name so that we can make a formal transcription of this because that is one of the requirements in the law. It's not set up to make you feel uncomfortable or put you on the spot, but just so that we can accurately document. If people would like to open up the meeting for more general discussion then after we have given everyone a chance to provide formal testimony, we can close the formal part of the hearing and just open it for more informal questions and answers. It's my understanding that Gretchen may have a bit of a proposal for us and so her testimony may be a little bit lengthy and we want to try to leave a enough time for everyone, but perhaps the best thing to do is go ahead and start with the individuals that are here and then we'll, hopefully, have enough time for Gretchen when she gets here. So, before we begin formally, if there are any questions or comments about the procedure, we'll take a break and try to answer those.

BY UNIDENTIFIED SPEAKER:

I'm just curious -- what the do you do with the information that we give you as far as like the sockeye? From what I understand, you haven't really looked into the into the sockeye fishing resources and also the impact that the blasting will cause. What do you do with this information where --



## Responses to Comments at Port Protection Hearing

### DHP-1

The comment of the Sumner Straits Advisory Committee opposing further harvest in the Project Area is noted.

BY KATHY SMAYDA:

What we do is we'll go back and take your comments and concerns and, in this case, requests for maybe some more detailed information and see if we can incorporate that into the final EIS. The one we're looking at now is just the draft and we can provide more information to make a better judgment in the final. And what we will try to do in the final is, there will be a separate appendix. You will get an additional volume when you get the final that will have all of the comments we received and the responses to all of those. So that should help you track. If it's a comment that can't be dealt with at this level, something that's at the Forest Plan level, that will be stated there so that you can see what we've done with it. If we have addressed it, we can point you to the area. We'll say, for example, additional information is being provided in the fisheries section. So that appendix will help you. It's a little bit lengthy to work through, but it should help you to be able to track what we've done with individual comments. Any other questions about the general procedure? If not, then we'll go ahead and begin the formal part here and I have to say a statement that introduces the meeting. We'll now begin the formal subsistence hearing. Just for the record, this is September 22nd, and it's about 1:00 p.m. and we're here in Port Protection. The primary purpose of this hearing is to hear your views, comments, concerns about how the proposed Lab Bay timber sale alternatives may affect your subsistence use of the Tongass National Forest. And this hearing is scheduled to last until approximately 2:30 p.m. We'll try to make time if needed to incorporate additional comments beyond that time. We encourage you also to provide written comments. The comment period will be open through September 30th, 1995. All of your comments, written and oral, will be considered in the final EIS. Please sign the sign-in sheet so that we can spell names accurately. And if you would just identify yourself and print your address as you come up to the microphone, that will help us make an accurate record of the testimony. These transcripts will become part of the formal public record and will be included in the final EIS. Thank you for attending the hearing and we'll start now just by asking if there is anyone who wishes to give any formal testimony or comments at this time.

Okay. Can I ask you to come up here and sit next to the microphone please.

BY DON HERNANDEZ:

Okay. My name is Don Hernandez. I live in Point Baker. And first I'd like to give some testimony as my capacity as the chairman of the Sumner Straits Advisory Committee and then I'll give the personal testimony also. Sumner Straits Advisory Committee held a meeting on September 16th and at that meeting we discussed the draft EIS and made comments about it. At that meeting we decided that our position would be to recommend the no-action alternative for the Lab Bay period coming up. Our basis for that was due to the fact that it's acknowledged in the environmental impact statement that there will be significant losses to subsistence opportunities by the residents of Point Baker and Point Protection and we've had no alternative given -- our main interest as a body is the welfare of the people here and their subsistence needs. We're also very concerned with wildlife and fisheries populations in our area and due to that fact, we really have to go on record as opposing any further impacts to our specific area here. And that concludes my testimony for Sumner Straits Advisory Committee.

DHP-1

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Page 2



I'll just move right on to my personal testimony. If that's fine. Okay. I'll start over. My name is Don Hernandez. I live in Point Baker. My address there is Box 48, Point Baker. I've lived there for about 11 years now. And I'm here with my son Carl. He is six years old. I'm testifying as much on his behalf as my own, because what we're really talking about here is the future of this area. I think it affects him probably as much if not more than it affects me. I guess I'd like to start with a little like general thoughts and comments here about this area and then I have some more specific things related to future activity here. Since I've lived in Alaska over 20 years now, I rely heavily on wildlife and fish for my needs. Since I've lived in Point Baker, it's about, probably, 98% of all of our meat resources is from deer and fish that we harvest locally. So it's extremely important to me what happens to our wildlife and fish here. I think what worries me the most about future plans for this area is the long term effects that we're going to see in the future here. And I guess I'm really concerned about the decreases in the deer populations that are anticipated due to the logging activity. I refer back to a chart in the EIS there that talks about the management indicator species and what's going to happen there, particularly the deer. As of now, I guess we see they are anticipating a 16% reductions in the deer populations due to logging activities in the area. For the long range goals, at the end of the 100-year rotation, if logging continues at the rate anticipated in the Forest Service plans there, a 51% decrease in the populations based on the ability of the habitat to sustain deer populations. Of course, there is a list of all kinds of other indicator species there that -- everything showed declines. I'm pointing out deer just because it's so important to us. That to me is not really not acceptable. I feel we have to change the course here a little bit of how we're managing our forest lands. That's just too great of a loss and I guess really the only place we can start is with this next three-year plan that's before us. If we don't start now we really have no hope for the future. So I would recommend a decrease in the level of logging in this north Prince of Wales area.

DHP-2

Some of the things that kind of worry me the most, it may be hard to address too well in the EIS there, are the long term and very subtle effects that are happening to our forest. It's probably really hard to quantify and come up with real hard numbers on what some of these effects are, but I think I've lived here long enough now in this forest to see how much of an effect very subtle changes can have and I don't really think that the analysis that is done for these EIS's can really account for it all. Just as example, I'm certain in my own mind I've read a lot about it that we are experiencing long-term climatic changes and I don't really know if that's incorporated into your studies. Global warming, something you've all heard about. How is that going to affect the forest. I guess I'm particularly worried as far as that on the fisheries resources. One of the main factors in a healthy stream is water temperatures and the forest canopy is what regulates those stream temperatures and we're rapidly eliminating that forest canopy. If we are experiencing global warming on a subtle basis, in the future it would be catastrophic. And some of the same factors could affect our wildlife populations also. I guess -- it's probably would be acknowledged just about anybody in the scientific community that one of the best defenses against changing climatic conditions is diversity. Biodiversity in both our wildlife populations and our habitat. And what we are doing here on Prince of Wales Island is we're rapidly changing the diversity of our ecosystem. We're establishing a lot of even-aged stand timber. If the Forest Service manages the second growth towards a less diverse species, predominantly spruce, it's a natural occurrence for spruce to come back as the primary regeneration in the second growth. And the Forest Service also thins with spruce as the preferred species due to market conditions.

DHP-3

**DHP-2** Comment noted. Implementation of the Lab Bay Project follows the TLMP 10-year action plan. Refer also to response to JK-3, which addresses subsistence concerns.

**DHP-3** Your comment regarding global warming is noted; however, it is outside the scope of this analysis.

Responses to Comments at Port Protection Hearing

**DHP-4** Your comment supporting road closures is noted. The Final EIS includes a road access management plan which proposes closure of most roads to be constructed for the sale, and over 50 miles of existing open roads.

And just a little something that's been in the news here recently is the bark beetles. There's bark beetle infestation that has appeared for the first time in southeast Alaska. In the Lower 48 and Kenai Peninsula it's very devastating effects that disease and parasites and second-growth stands and we may just be seeing the beginning of it. One of the things I read on the bark beetle was the fact that it maybe appearing in southeast Alaska for the first time due to climatic changes. I think that's exactly what I just stated there as one of my concerns. It wouldn't be here if it weren't for subtle climatic changes and it's just appeared. It would be devastating. Another thing I've read recently is some information on yellow cedar decline. They have no idea what is causing yellow cedar decline, but their best guess is subtle climatic changes that are now making it a less viable species for southeast Alaska. I think all of these things are just indicators.

Okay. Now to be a little bit more specific. I guess I'd like to talk about roading, road building in association with logging. Here in our area we've traditionally been a community that hasn't relied on road systems for much of anything. That's changed quite a bit in the last few years since I've been here. It's changed tremendously since I first came here. A lot of people from here now do depend on the road. They use the road as a means to do their subsistence hunting, which wasn't true 10 or 15 years ago. There are benefits to having a road system for the hunting and going out and doing subsistence fishing. But I think once again in the long term extensive road building is going to be the detriment of our subsistence way of life. Increased accessibility for hunters from all over is bound to have a detrimental effect and I think I would recommend a very conservative approach to the road building and also closing of roads. By that I mean, I would recommend as many roads as feasible be closed off at the end of a logging period. It may not be too popular with some of the local hunters, but I think it's for the best in the long run.

DHP-4

I wanted to talk also on the -- kind of the same topic a little bit about some feelings I have on the way in which our game populations are managed and something that I've noticed since I've live here in Point Baker area, north end of Prince of Wales, is that I think most people would agree when an area is logged it experiences a pretty good increase in hunting success in that area. If you open up clear-cuts, you open up the roads, people use them. Hunter success is pretty high. We saw that when I first moved here. Some of the -- a lot of logging in the area, people were just going out and getting deer like mad. It was wonderful. I go to some of those same areas now, ten years later, and I see very little deer sign. And I go there in the wintertime and when the season is closed and I walk these roads and I look for deer tracks and they are just not there anymore. They don't use those areas. It's obvious. An effect that I believe that has or has had in that situation is in the way the game is managed. I made inquiries on this to Fish and Game Department and pretty much confirmed my observations that there really is not a whole lot of actual on-the-ground deer population census being done. Fish and Game doesn't have the budget to do it. I don't think the Forest Service has the money budgeted really either to do what's really necessary in getting hard, physical observations of what's present. The way it is done is through hunter success reports. I believe that those are badly skewed by an ongoing logging operation throughout the island. People will always go to the areas that are freshly logged, hunter success stays very high, as long as, and this is important, as long as new areas are always getting opened up to hunting. On the north end of this island, there are not many new areas left and the areas that were logged 10, 15 years ago are definitely on the decline. And hopefully you can see what



# Responses to Comments at Port Protection Hearing

- DHP-5** Your comment has been noted.
- DHP-6** Your comment was considered along with other similar comments, and is reflected in Alternative 6 of the Final EIS. Alternative 6 defers harvest on units located north of the 20 Road between Shine Creek and Protection Head.
- DHP-7** Your comment was considered along with others and is reflected, in part, in the Final EIS under Alternative 6, which does not propose to harvest units 532-221, 223, and 231.
- DHP-8** Your comment was considered along with others and is reflected, in part, in the Final EIS under Alternative 6, which does not propose to harvest units 534.1-204, 211, and 212.

I'm trying to get at here on how this could affect what is really an accurate portrayal of just what deer populations are in our area.

Something else that I touched on a little bit in past testimony that is still a concern with me is another thing that's very important to successful hunting is access and one of the effects of intensive logging on that access is the clear-cuts of after they've matured become virtually impenetrable. Anybody who has tried to pack a deer on their back through a 15-, 20-year-old clear-cut knows what I'm talking about. And some of these places that are favorite hunting areas for local people, access to those areas is through areas that have been logged or are scheduled to be logged. And quite often access, to say, a higher elevation area, will be made impossible because of the way clear-cuts are situated and there may be leave strips, or a appear to be adequate leave strips, but quite often the reason those leave strips aren't logged is due to steep terrain. It's also the same reason nobody would want to pack a 120-pound deer down that strip also. I've seen a lot of areas where you just can't physically hunt those prime areas anymore because of that situation also. I think that should always be a consideration in laying out these units that the layout teams have to consult with local knowledge on that factor. Did I burn up the tape? I hope you brought lots of tape.

**DHP-5**

BY GRETCHEN :  
Is there someone transcribing this?

BY KATHY SMAYDA:  
No. It will be done from the tapes.

BY DON HERNANDEZ:  
Also, what I was just talking about -- blowdown. Blowdown is also a big factor. Leave strips that blow down -- access block by blowdown happens quite often. And I also have some more specific comments relating to specific units and VCUs. Can I look at the map and still be heard by the tape? Okay. In VCU 529, Unit 270, it's in the Baker Creek drainage. I have a concern with that one. It's in the preferred alternative. That particular unit would block a major wildlife corridor down that Baker Creek drainage. I know there's a bit of State land here in our area. I think for the help of the deer populations in this area we need to have migration from higher elevations and that particular unit adjoins two other large older units and I think that would be a major block on that corridor. I don't really like that. VCU 532 is a series of units 219, 220, 221, 223, and 231 these stem the road system, spur road, into an area that's heavily used by local subsistence hunters. I, of course, would rather see those units not added. They are in the preferred alternative. That will increase hunter pressure heavily, one of the last few places where I found good deer hunting success. I would prefer they were not there. If they are included and in the next cutting plan I would strongly recommend that that road be closed when a lot of it's depleted. That would help alleviate that situation a little bit. Also in VCU 534 and 534.1 the Salmon Bay drainage there. Units 228, 226, 225, 204, 211 and 212: pretty much the same reasons there. That little corner, Salmon Bay corner, has been roughed pretty well in the past up until now. It has pretty good hunter success in that area. I would also recommend that that road be closed also.

**DHP-6**

**DHP-7**

**DHP-8**



Responses to Comments at Port Protection Hearing

DHP-9

Your comment was considered along with other similar comments, and is reflected in alternative 6 of the Final EIS which does not propose construction of the Calder Tie Road.

DHP-9

And talking about roads still, I'd like to -- let's talk a little bit about Calder Tie road, this presently is a spur road that runs out to Calder valley there and that road as been closed, the bridge taken out. My concern is that the building of the Tie road there would establish that as a mainline road. I'm assuming that's what the intention is there, given the cost of building that road, it would be left open. A lot of us have concerns on that because that is essentially the back door you might say to the Calder-Holbrook wilderness area. That is our bread basket that area. That has always been the best areas for hunting for local people here and having a road open there will not be to our benefit. And I believe that will conclude my testimony. Thank you very much.

BY KATHY SMAYDA:

Thanks, Don. If you want to take that copy of the map. I would clarify there is an awful lot on this map and it can be hard to read, but almost every road that's proposed to be built, new construction, is also proposed to be closed. In addition, we'd be closing existing, roads that are currently open and they are color coded on here. You have to work a little bit, but the two specific areas that you mentioned here on the east side of Red Bay and this group here that we call the California Bay String, both of those roads would be closed after the harvest.

BY DON HERNANDEZ:

What about the tie road?

BY KATHY SMAYDA:

The tie road, if it were built, it -- the intent would be have it as an arterial, so it would be left open. Okay. Is there anyone else who'd like to provide testimony?

BY GRETCHEN GOLDSTEIN:

I would. I'm going to sign in here. My name is Gretchen Goldstein. This is my personal comment. I have lived in Port Protection for 17 years. In those years, I have been actively involved through our local Fish and Game Advisory Committee. With trying to stop the negative impacts of clear-cut logging on our subsistence deer habitat. For years the advice of the Advisory Committee has been ignored because of the demands of the 50-year timber contract. Now, what the Advisory Committee said was happening has gotten so bad that significant impact must be admitted to and dealt with. The Lab Bay Draft EIS states that the area proposed for logging already has been harvested beyond it's ability to meet existing deer hunting demands. It states that the area presently should be restricted to subsistence only deer hunting. It states that by the year 2004, under any action alternative, there will have to be restrictions, even on subsistence use of deer. Subsistence use of bear may also be significantly restricted. The EIS fails to provide evidence that such significant restriction of subsistence use is necessary and consistent with sound management principles for the utilization of public lands. The EIS states that habitat preservation is the only mitigating measure to off set this projected decline in subsistence deer harvest. For these reasons, I cannot support any further timber harvest in this area. The no-action alternative is the only acceptable alternative. That is the only alternative that protects subsistence use in our area. I urge the Forest Service to listen to the local Advisory Committee and allow no further timber harvest in the area covered by this EIS under the existing 50-year contract. Thank you for the chance to comment.

GGP-10

GGP-10

Your comment opposing further harvest in the Project Area is noted. For a detailed discussion of ANILCA, please refer to response to JK-3.

LHP-11	Refer to response to LH-1
LHP-12	Refer to response to LH-2
LHP-13	Refer to response to LH-3
LHP-14	Refer to response to LH-4
LHP-15	Refer to response to LH-5

Now, I was sent a letter by Lance Howell and he asked me to read it into the record, so is it okay if I go ahead and do that now?

BY KATHY SMAYDA:  
Sure that's great.

BY GRETCHEN GOLDSTEIN:  
Lance Howell lives in Sumas, Washington, but he lived here years ago and he now has a summer place here.

Of all the considered actions in the Lab Bay Project Area Draft EIS, Alternative 3 is the preferred alternative. After being away from Port Protection during much of the operation of the logging camp in Labouchere Bay, it is shocking to see how much timber was cut in just a few years. When I think about, it I'm amazed at how our generation has the arrogance to consume so much so fast, confident that future generations will applaud our gluttony. In accordance with present political constraints I support Alternative 3 with these reservations: in VCU 529, Units 270, 286, 259 and 257 should be dropped. For years people of Point Baker and Port Protection have been working for forest preservation. For years there has been heavy cutting in the area. More than half of the high volume old growth has been taken. Dropping these cuts would protect the winter range of the deer that are so important to area residents. The already fragmented forest should remain a forest. A habitat conservation area should be established in the Port Protection and Point Baker area. The Calder Tie road should not be built and roads should be closed after forest removal.

There are questions regarding the desired future condition of the forest. It is stated that all available old growth will be logged and that the forest will be replaced by young vigorous second growth to be logged again in a hundred years. It is not clear why this is to be desired. I first came to the Tongass in 1973 when there was still 30 years to go on the KPC contract. I remember being told then not to worry the forest will grow back in 50 years and will again be available for harvest. In fact, there is some remnant belief in this fantasy. I was recently assured as much by an employ of KPC. Now, after also 50 years of large-scale logging the question arises, why don't you go back and cut those areas you cut 50 years ago? The answer now is, after a hundred years the forest will again be available for harvest. Is that true in the mountain hemlock zone? Is it true on the eroded areas of Flicker Ridge and similar areas? Is it true of the low volume timber stands adjacent to muskegs? Have we seen even 50 years of growth in areas such as these? How do we know how even the best timberland will respond to a second timber cutting? We don't know and can't know because the time hasn't gone by yet and whatever problems will arise with the second-growth industry are as yet unknown. And still, with the same assurance that we were told about with the 50-year harvest we are told that the forest will be back in a hundred years. We know more than we used to about some of the costs of this desired future condition. It is said in the EIS that logging old growth is depleting a non-renewable resource. Is the value of these big old trees, these musical-instrument-quality, spruce sawlogs, these yellow cedar logs that can be used for building Japanese temples, are these what is paying for the high cost of logging in the Tongass? When these trees are all gone and we



## Responses to Comments at Port Protection Hearing

<b>LHP-16</b>	Refer to response to LH-6
<b>LHP-17</b>	Refer to response to LH-7
<b>EWP-18</b>	Please refer to response to TCP-7. Alternatives 3 and 6 defer harvest and road-building in VCU 527.

are logging second growth, will there be enough profit in the industry to continue to afford the environmentally sensitive logging practices we increasingly employ? Will the tax payers want to continue to subsidize such an industry? Will logging low-value second growth in the Tongass be a viable option? There are huge fiber farms in areas around the world where regeneration is much faster, where the feller buncher low-labor costs and lack of regulation make for much cheaper costs of production. Will there be new fiber grown in harvested and agricultural areas that will make bulk fiber production in the Tongass unprofitable? Will this desired future condition really be anything to desire? Or will the pulp mill move out leaving biological impoverishment and economic despair? You say that many species including wolf and marten will be reduced to half of present populations and that some will be isolated in islands of remnant habitat. Will that be enough the insure viable populations? You say that deer populations will be reduced to such an extent as not to meet the subsistence needs of the existing communities. You say that road building and logging on sensitive karst lands can do permanent damage. Are the regulations protecting salmon habitat adequate to the task? Will enforcement on the ground be thorough enough to insure habitat protection? The EIS does much to document these problems. It is time to re-evaluate our direction. I mentioned in the meeting in Port Protection in late August that we need a model for a different kind of forestry, one that harvests a much lower volume, that relies on small sales and encourages value-added production. The real value of the Tongass in the future will be, if they still exist, its wild spaces and wonders. That can't be duplicated on a hemp farm in Nebraska or a pine plantation in Alabama. Here on north Prince of Wales we have the opportunity to preserve those values and create a small rational lumber and processing industry that can help sustain prosperous communities and a rich and diverse ecosystem. So in answer to your question of the last meeting, Anne, on which cutting units would I suggest practicing an experimental forestry, I answer all of them. I look forward to working with you to help create the conditions that will allow north Prince of Wales to become a model for sustainable forestry and community development. As is stated in the EIS, the very existence of a healthy, abundant ecosystem has immeasurable value to the American public. We could add to that a human culture that preserves and protects those values while providing real products, recreation fish, wood products and more to the public. Respectfully, Lance Howell.

LHP-16

BY KATHY SMAYDA:

Is there anyone else that would like to make comments?

BY ERNEST WATSON:

I am Ernest Watson, a resident of Port Protection on lot 14 at the base of the watershed area, Spring Creek. The source of our water supply flows through my property as Spring Creek. Living this close to this area for 20 years I have come to know how sensitive it is. It is my feeling that no further action on the cutting areas 226 and 206 be taken until the following things are done: 1. A complete karst study of these two areas. On the map 226 and 206 are just behind the water tower; 2. A marbled murrelet study of the nesting areas in the cliffs of the immediate area. This has not ever been done before. A complete hydrology study of these areas with particular concentration on these two areas, but also to incorporate that together maybe with a karst study. When I saw the karst thing I realized how important that was. So, my personal feeling is at this time no further action. Cutting, logging, or roading here until I am assured that it will not be a threat to my survival and those about me. Thank you.

EWP-18

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Page 8



# Responses to Comments at Port Protection Hearing

<b>DBP-19</b>	Under Alternatives 3 and 6, no harvest is proposed on Protection Head.
<b>DBP-20</b>	Your comment opposing further harvest in the Project Area is noted.

BY KATHY SMAYDA  
Thank you. Is there anyone else? If not then we'll go ahead and close the formal part of the hearing and we can open up for questions and discussion. And if anyone decides they'd like to provide testimony or provide any additional we can reopen the hearing and go ahead and do that.

BY DESSA BAKER:  
I'd like to say something. My name is Dessa Baker and I'm a 60-plus-year resident from Yakutat to Wrangell and I built my retirement home here in Port Protection. I live on lot 27 which is in Port Protection itself, it's not around here in the cove. And I am very adamant against any logging on Protection Head because I'll blow away. I already suffer, trees being blown down because of an accidental cut back behind Lab Bay. And the harbor in Port Protection itself is used heavily by the commercial fishermen during the fishing season as a safe harbor and it's quickly becoming a wind hole from previous cutting. And I live in southeast Alaska because of the beauty of the country and the quality of life which I see going down the tube for the sake of a company that's in very serious financial trouble and I just wonder in 50 years how much the Corporation is going the care about the way southeast Alaska looks and I don't feel that I want to spend my remaining years looking at a clear-cut. I'm not anti-logging. I'm for sensible logging which I think can be done. I think it's time for the great southeast Alaska give-away to the timber companies to stop. And I'm against any cutting on the north end of Prince of Wales Island.

BY KATHY SMAYDA:  
Thank you.

**DBP-19**

**DBP-20**

# **Appendix P**

## **1996 TLMP Draft Revision Deer Model Results**

# 3.1DIN-90A

Standard for the design and  
construction of the



## Lab Bay Deer HSI's using revised TLMP 96 Deer Model.

## 1954 Project Area

WAA	Acres	HSI
1527	37644	0.311919
1528	24587	0.097526
1529	71166	0.297251
1530	40791	0.274884
	174188	

## 1996 Project Area

WAA	Acres	HSI
1527	37644	0.267488
1528	24587	0.077396
1529	71166	0.239215
1530	40791	0.192042
	174188	

## 1996 Alt. 2 units

WAA	Acres	HSI
1527	698	0.268959
1528	249	0.137082
1529	2212	0.316335
1530	1402	0.292154
	4561	

## 1996 Alt. 3 units

WAA	Acres	HSI
1527	222	0.192192
1528	199	0.128643
1529	1450	0.235402
1530	1180	0.274802
	3051	

## 1996 Alt. 4 units

WAA	Acres	HSI
1527	354	0.289266
1528	249	0.137082
1529	1326	0.302464
1530	835	0.286148
	2764	

## 1996 Alt. 5 units

WAA	Acres	HSI
1527	252	0.474074
1528	249	0.137082
1529	1531	0.312127
1530	1080	0.292346
	3112	

**1996 Alt. 6 units**

WAA	Acres	HSI
1527	21	0.000000
1528	167	0.153293
1529	958	0.204871
1530	579	0.250547
	1725	

**1997 Alt. 2 Units**

WAA	Acres	HSI
1527	687	0.211160
1528	249	0.034270
1529	2212	0.169741
1530	1402	0.188683
	4550	

**1997 Alt. 3 Units**

WAA	Acres	HSI
1527	222	0.192192
1528	199	0.042881
1529	1450	0.105931
1530	1180	0.180791
	3051	

**1997 Alt. 4 Units**

WAA	Acres	HSI
1527	354	0.216949
1528	249	0.034270
1529	1326	0.167320
1530	835	0.173733
	2764	

**1997 Alt. 5 Units**

WAA	Acres	HSI
1527	252	0.338624
1528	249	0.034270
1529	1531	0.161637
1530	1080	0.181728
	3112	

**1997 Alt. 6 Units**

WAA	Acres	HSI
1527	21	0.000000
1528	167	0.000000
1529	958	0.106889
1530	579	0.162119
	1725	

**2054 Project Area**

WAA	Acres	HSI
1527	37644	0.134424
1528	24587	0.053101
1529	71166	0.111994
1530	40791	0.119242
	174188	

**Percent Change in Habitat Capability for Deer Relative to 1954 Condition, by WAA**  
**Based on 1996 TLMP Draft Revision revised Deer Habitat Capability Model**

<b>WAA</b>	<b>% Change 1996</b>	<b>% Change 1997</b>	<b>% Change 1954</b>
1527	-14.24%	-14.61%	-56.90%
1528	-20.64%	-21.71%	-45.55%
1529	-19.52%	-21.06%	-62.32%
1530	-30.14%	-31.43%	-56.62%
Total	-20.81%	-21.96%	-58.72%





# **Appendix Q**

## **Units of Economic Concern**

# Abstract

1. Introduction



## Units of Economic Concern

There are individual units and groups of units that are at economic risk under fluctuating current market conditions. These units and associated roads are identified below. Specific measures that may reduce the economic and/or environmental risk of these units are directed for investigation during sale layout.

- a. Four units near Perue Lake (529-212, 529-214, 529-215, and 529-218) have a high level of economic risk due to a long access route including a major stream crossing and steep side slopes with soils concerns. To reduce this risk, an alternate route that may provide lower road construction costs with equal, or lesser, environmental effects should be explored during final layout.

Several alternate routes to the Perue Lake units were investigated during the 1992 field season, including two that would access from northwest of the lake and one that would approach from south of the lake. The southern route was selected because of easier construction, shorter distance, and fewer environmental concerns associated with the proposed road. This route relied on construction of a road cleared under the 1989-94 sale offering to harvest unit 531.1-116. However, in the fall of 1992, unit 531.1-116 and the associated road were dropped from the 1989-94 offering due to extensive construction within a TTRA buffer and concern over proportional harvest.

The decision to drop the unit and road was made after field verification for the Lab Bay project was completed, leaving no verified access to the four Perue Lake units. Subsequently, logging engineers used aerial photos and topographic maps to develop the currently proposed route from the north. This route is shown on the alternative maps and the unit cards. As noted above, this access route is long, includes a major stream crossing and expensive side slope construction, and carries potential risks to soils and fisheries resources. An alternate access route that appears feasible is from the northwest of Perue Lake beginning at unit 529-223 (Selected Alternative) and continuing southeast downslope of proposed harvest unit 529-218. This alternate road location would continue to the southwest of the lake, then head east into unit 529-218. This road alignment will be explored during final layout and may be used if it appears to have equal or lesser environmental concerns and result in lower road construction costs.

- b. Unit 535-209 is considered to be at economic risk unit due to the need for helicopter yarding. A road from unit 535-208 and a conventional cable yarding system was initially planned for this unit in 1992. During the ID Team review of this unit a slope stability concern was recognized within and between units 535-208 and 535-209. As a result, the road access was not recommended and the yarding system for unit 535-209 was changed to helicopter. This change would provide protection to the soils by achieving full suspension during yarding. Subsequently, between fall of 1992 and fall of 1994, a landslide occurred in the southern setting of unit 535-208 that confirmed the ID Team's concerns regarding slope stability. The southern setting of unit 535-208 was dropped from the unit pool.

Alternate access to unit 535-209 from the ridgeline above the unit should be investigated during final layout. A road alignment extending along the ridgeline from unit 535-208 while avoiding potential unstable areas may be feasible.

- c. Units 531.1-241, 536-208, and 536-209. This group of units is at economic risk due to their isolation from other units in the Preferred Alternative, due to the need for helicopter harvest of two of the units, and due to a relatively long and difficult road alignment to unit 536-208. An alternate road alignment to unit 536-208 has been identified in the Unit Design and Road Card in the Final EIS. This alignment should be investigated during

final layout, as it may reduce the length of new road required by half and may reduce potential impacts to soils resources.

The following units are also considered to be at economic risk. Options for reducing the economic risk are not evident at this time. Sale and harvest of these units may be dependent upon market conditions at the time of the sale.

- a. The 109 2-acre patch cuts comprising the Thorne Island Uneven-Aged Management Plan are considered to be at economic risk due to the reliance on helicopter yarding.
- b. Units 530-234 and 530-236 are considered to be at economic risk due to the recent removal of culverts and bridges along the existing Buster Creek road. The replacement of these structures, and the need to comply with construction timing restrictions for fish, will increase the cost of harvesting these units over that estimated in the Final EIS.
- c. Unit 535-205 is considered to be at economic risk due to the length of new road construction required and a designated wildlife leave area located in the south end of the unit.
- d. Unit 539-210 is considered to be at economic risk unit due to helicopter yarding. A road and a conventional cable yarding system were initially planned for this unit in 1992. The proposed road to access unit 539-210 crosses high vulnerability karst. In order to prevent impacts to karst ecosystems, the logging system for this unit was changed to helicopter yarding and the proposed road was eliminated. No alternate road alignments are evident.
- e. Unit 539-222 is considered to be at economic risk due to the length of new road construction required, a major stream crossing requiring a bridge, and potential construction timing restrictions due to bald eagles and fish.
- f. Units 540-206 and 540-210 are considered to be at economic risk due to the length of new road construction required and a stream crossing requiring timing restrictions for fish. Both units contain relatively low volumes of timber.

The area described blow is not considered to be at economic risk. However, alternative access should be evaluated during final layout to determine if cost savings can be achieved with equal or lesser environmental effects.

- a. An alternate access route to units 533-248, 533-249, and 533-251 will be explored during final layout from existing road 2077100 which terminates immediately south of unit 533-248. This road was constructed after field reconnaissance was conducted for the Lab Bay EIS. The alternate access route would eliminate the need to construct approximately one-half mile of road west of unit 537.1-208.









# Lab Bay Project Area Map

## Project Unit Pool

October 1996







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